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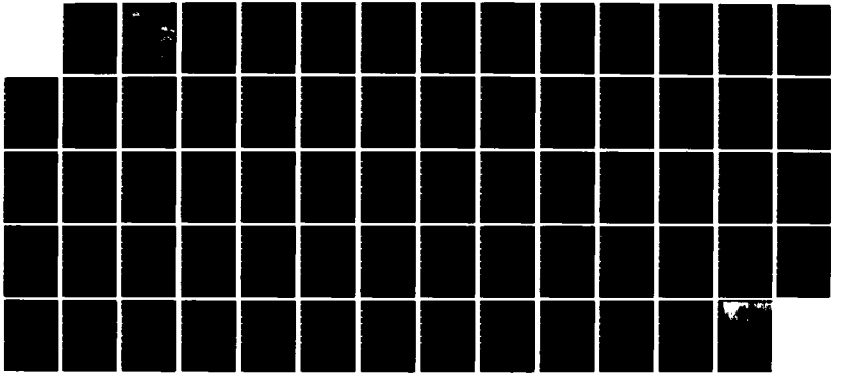

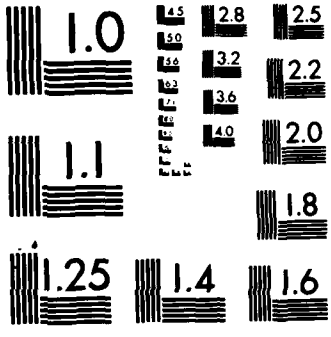

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UNITED STATES AIR FORCE

OCCUPATIONAL SURVEY REPORT

AIRFRAME REPAIR CAREER LADDER

AFS 427X5

AFPT 90-427-506

MARCH 1984

OCCUPATIONAL ANALYSIS PROGRAM
USAF OCCUPATIONAL MEASUREMENT CENTER
AIR TRAINING COMMAND
RANDOLPH AFB, TEXAS 78150

DISTRIBUTION FOR
AFS 427X5 OSR AND SUPPORTING DOCUMENTS

	OSR	JOB INV	ANL EXT	TNG EXT
AFHRL/MODS	2	6	1m	1m
AFHRL/ID	1	1	1m	1m/1h
AFLMC/LGM	1	1		1
AFLMC/XR	1			1
AFMEA/MEMD	1	1	1h	1
AFMPC/MPCRPQ	2			
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HQ AFISC/DAP	1	1		
HQ AFLC/MPCA	3	3		3
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HQ ATC/DPAE	1	1		1
HQ ATC/TTQL	2	1		1
HQ MAC/DPAT	3	3		3
HQ PACAF/DPAL	1	1		1
HQ PACAF/DPAT	3	3		3
HQ SAC/DPAT	3	3		3
HQ SAC/LGMQ (ATCLO)	1	1		1
HQ TAC/DPAT	3	3		3
HQ TAC/DPLATC	1	1		1
HQ USAF/LGYM	1	1		1
HQ USAF/MPPT	1	1		1
HQ USAFE/DPAT	3	3		3
HQ USAFE/DPATC	1	1		1
HQ USMC (CODE TPI)	1	1		
LMDC/AN	1			
NODAC	1	1		
3330 TCHTW/TTGX (CHANUTE AFB IL)	5	2	2	9
388 TFW/MAT	2	2		2
3507 ACS/DPKI	1			

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PREFACE

This report presents the results of a detailed Air Force Occupational Survey of the Airframe Repair (AFS 427X5) career ladder. Authority for conducting occupational surveys is contained in AFR 35-2. Computer products used in analysis for this report are available for use by operating and training officials.

The survey instrument for this project was developed by Captain Clint C. Thatcher, Inventory Development Specialist. Ms Vera Frechel provided computer support for the project. Second Lieutenant Jarean L. Ray, Occupational Analyst, analyzed the data and wrote the final report. This report has been reviewed by Lieutenant Colonel Jimmy L. Mitchell, Chief, Airman Career Ladders Analysis Section, Occupational Analysis Branch, USAF Occupational Measurement Center, Randolph AFB, Texas 78150.

Copies of this report are distributed to Air Staff sections, major commands, and other interested training and management personnel (see DISTRIBUTION on page i). Additional copies are available upon request to the USAF Occupational Measurement Center, Attention: Chief, Occupational Analysis Branch (OMY), Randolph AFB, Texas 78150.

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SUMMARY OF RESULTS

1. Survey Coverage: 2,356 airmen in the Airframe Repair career ladder (68 percent of all assigned 427X5 career ladder personnel) were surveyed to obtain current career field data and to examine the extent of composite material repairs. Other classification and training issues also surfaced in the analysis of the data.

2. Specialty Jobs: Eighty-three percent of the sample grouped into a single cluster of Structural Repair Personnel, with small variations. In addition, analysis identified five independent job types with personnel performing limited or specialized tasks. One of these job types (Mobility Support Personnel) is composed of a small group who work only on repairing transportable buildings.

3. Career Ladder Progression: As personnel progress through the career ladder, they perform an increasing number of supervisor tasks, but still perform a basically technical job.

4. AFR 39-1 Specialty Description: The Specialty Descriptions for the Airframe Repair Specialty appear basically accurate, with the exception of Mobility Support Personnel, who do not work on aircraft. Utilization of Airframe Repair Specialists as Mobility Support Personnel to repair transportable buildings is inconsistent with AFR 39-1.

5. Training Analysis: An examination of the 427X5 STS matched with survey data showed that training emphasis and task difficulty ratings for advanced composite material repair tasks are both above average, and that over 30 percent of first-job and first-enlistment personnel are performing inspection and classification tasks with high training emphasis ratings. Because these two areas are rated as a dash for the proficiency code, they should be reviewed as areas of concern.

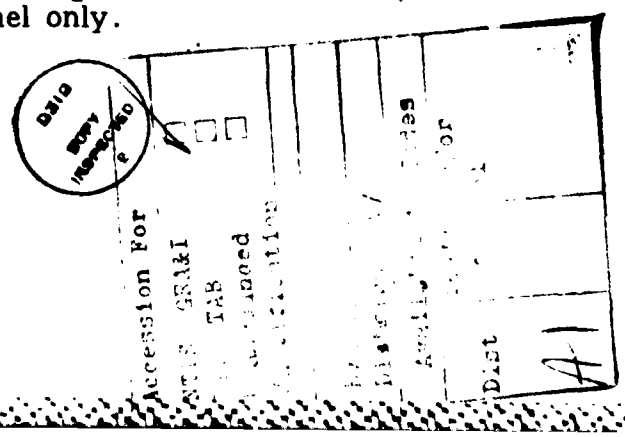
6. MAJCOM Analysis: Most differences between MAJCOM personnel were minor, with the exception of AFLC personnel, who perform a more limited job.

7. Implications: Analysis showed three areas that merit further attention:

a. Mobility Support positions should be reexamined by manpower specialists for possible transfer to a more appropriate specialty.

b. Composite material repair training may need to be considered for airmen before their first job assignment.

c. First-job and first-enlistment personnel are performing inspection and classification functions, which, according to the 427X5 STS, should be performed by 5- and 7-skill level personnel only.



OCCUPATIONAL SURVEY REPORT
AIRFRAME REPAIR CAREER LADDER
(AFS 472X5)

INTRODUCTION

This occupational survey examines the Airframe Repair career ladder, including AFSCs 42735, 42755, and 42775. The purpose of the study was to collect current career field data and data concerning the utilization and repair of composite materials, and to examine the implications of this data for curriculum training. In addition, this report provides information concerning personnel utilization, job structure, and impact on classification and training.

The Training Manager at Chanute AFB, Illinois, requested this survey. The last occupational survey report for the Airframe Repair career ladder, then designated as AFSCs 53133, 53153, 53173, and 53195, was published in February 1976.

The Airframe Repair specialty was created in 1951 as AFS 534X0. In 1955, it became AFS 531X3. Finally, this specialty was taken from the Civil Engineering field and redesignated 427X5 in 1977. This redesignation reflected no changes for the 3- and 5-skill levels, but added to the 7-level responsibilities those of design, direction, and fabrication of aircraft control panels. The major responsibilities ~~of this AFS, according to AFR~~ 39-1, include repairing, modifying, and fabricating aircraft structure and parts. In addition, the 7-skill level responsibilities include troubleshooting repair situations, performing inspections, and supervising airframe repair activities.

To qualify ~~for AFS 427X5,~~ an airman must complete a 10-week, 4-day technical training course at the Chanute Technical Training Center, Illinois. The course includes training in principles, procedures, and techniques of airframe structural repair and fabrication, as well as familiarization with Air Force publications.

SURVEY METHODOLOGY

Inventory Development

The data for this survey were collected with USAF Job Inventory AFPT 90-427-506, developed by Captain Clint C. Thatcher. Using the last inventory, dated 15 April 1975, as a base, a revised inventory was developed through research and interviews at four different bases, as well as a review of AFR 39-1 and the STS for AFS 427X5. The current inventory consists of a task list and a background section. The task list contains 381 tasks, divided into 15 functional or duty areas. The background section includes such items as grade, TAFMS, work area, equipment used, organizational level, and job satisfaction questions.

Survey Administration

The inventory was distributed to Consolidated Base Personnel Offices in operational units worldwide for administration to 3,472 job incumbents selected from a computer-generated mailing list obtained from the Air Force Human Resources Laboratory (AFHRL).

To complete the survey, each incumbent first answered the background questions. Next, the individual checked all tasks that he or she performed and listed any additional tasks not included on the task list. Finally, he or she rated each task checked according to relative time spent. The ratings ranged from 1, representing a very small amount of time spent, to 9, representing a very large amount of time spent. To compare tasks in terms of average percent time spent, all of the incumbents' ratings are combined, and the total is assumed to represent 100 percent of time spent on the job. Each task rating is then divided by this total and multiplied by 100 to give the relative time spent for each task.

Survey Sample

Personnel were selected to participate in this survey to ensure an accurate representation across major commands (MAJCOMs) and paygrade groups. Survey booklets were mailed to all eligible DAFSC 427X5 personnel. Table 1 reflects the percentage distribution, by major command, of personnel assigned to the career ladder as of October 1982 and of respondents in the survey sample. Tables 2 and 3 show similar information according to paygrade and TAFMS groups. The 2,356 respondents in the final sample represent 68 percent of the total assigned DAFSC 427X5 personnel. As reflected in these tables, the survey sample provides a very good representation of the career ladder population.

TABLE 1

COMMAND DISTRIBUTION OF SURVEY SAMPLE

COMMAND	PERCENT OF ASSIGNED (N=3,472)	PERCENT OF SAMPLE (N=2,356)
TAC	31	29
MAC	21	22
SAC	18	20
USAFE	10	9
AFLC	7	6
ATC	6	7
OTHER	7	7

Total Assigned: 3,472
Total Eligible: 3,046
Total in Sample: 2,356
Percent of Assigned in Sample: 68%
Percent of Eligible in Sample: 77%

* Excludes those in training, hospital, or PCS status

TABLE 2

PAYGRADE DISTRIBUTION OF SURVEY SAMPLE

PAYGRADE	PERCENT OF ASSIGNED	PERCENT OF SAMPLE
E-1 thru E-3	43	44
E-4	22	23
E-5	19	19
E-6	10	9
E-7	5	4
E-8	*	*

* Less than 1 percent

TABLE 3

TAFMS DISTRIBUTION OF SURVEY SAMPLE

TAFMS (MONTHS)	PERCENT OF ASSIGNED	PERCENT OF SAMPLE
1-48	55	57
49-96	19	19
97-144	11	10
145-192	8	8
193-240	5	5
241+	2	1

Task Factor Administration

Selected senior personnel in AFS 427X5 completed a second booklet in addition to the job inventory booklet. Processed separately, these booklets provide rating information for each task concerning either task difficulty (TD), or training emphasis (TE). Task difficulty refers to the length of time required for the average job incumbent to learn to do the task. Training emphasis refers to the importance of structured training--that is, training provided through any organized training method, such as resident technical schools, field training detachments, mobile training teams, or formal OJT for first-term personnel. Table 4 shows the distribution and representation of both the TD and TE samples.

Task Difficulty. To complete the task difficulty booklet, each individual rated each task in the inventory with which they were familiar on a 9-point scale, ranging from extremely low relative difficulty (a rating of 1) to extremely high relative difficulty (a rating of 9). Thirty-nine NCOs provided the TD data with an interrater reliability (as assessed through components of variance of standardized group means) of .96. This figure indicates very high agreement between raters. The TD ratings were adjusted to give a rating of 5.00 to a task of average difficulty, with a standard deviation of 1.00. The data are then used to rank order the tasks in the inventory by degree of difficulty.

Job Difficulty Index. TD is also used to compute a Job Difficulty Index (JDI) for job groups identified in the survey. To provide a relative measure of the complexity of the jobs in comparison to each other, the JDI is computed based on the number of tasks performed and the average difficulty per unit time spent. Thus, a group spending more time on difficult tasks and performing more tasks will have a higher JDI. After measurements are standardized, the index ranges from 1.0 for a very easy job to 25.0 for a very difficult job, with an average JDI of 13.0.

Training Emphasis. Individuals completing training emphasis booklets rated tasks they believed required training for first-term personnel on a 10-point scale, ranging from 1 (low training emphasis) to 9 (extremely heavy training required), with a blank representing no training emphasis. TE data were collected from 58 experienced 7-skill level personnel in AFS 427X5 stationed worldwide. For TE ratings, the interrater reliability was .97, indicating very high overall agreement between raters. The average TE rating was 3.17, with a standard deviation of 1.71.

When used in conjunction with other information, such as percent members performing, task difficulty and training emphasis ratings can provide insight into training requirements. Such insight may help validate lengthening or shortening portions of instruction supporting AFSC needed knowledges or skills.

TABLE 4

COMMAND DISTRIBUTION OF TASK DIFFICULTY
AND TRAINING EMPHASIS RATINGS

COMMAND	PERCENT OF ASSIGNED	PERCENT OF TD RATERS	PERCENT OF TE RATERS
AAC	1	2	0
USAFE	7	13	11
AFLC	9	12	13
AFSC	3	4	0
ATC	7	6	11
MAC	17	12	17
PACAF	3	6	6
SAC	24	25	22
TAC	28	20	20
OTHER	1	0	0

SPECIALTY JOBS
(Career Ladder Structure)

An important function of the USAF occupational analysis program is to examine the career ladder structure within a career field. Based on incumbent responses to survey questions, the analysis identifies groups of incumbents spending similar amounts of time performing many similar tasks. Similar groups are then clustered together. In this way, analysis of the distinct jobs performed within the career field and of their relationship to each other results in a display of the career ladder structure. This information, then, can be used to understand current utilization of personnel, or to identify job satisfaction trends that may impact management decisions, or to examine such career ladder documents as AFR 39-1 Specialty Descriptions, Specialty Training Standards, or basic course Plans of Instruction.

Specialty Overview

In the Airframe Repair career field, there is an extremely high degree of similarity among job incumbents with regard to tasks performed and time spent on those tasks. Such a career field is referred to as highly homogeneous, indicating that most of the airmen perform the same type of job; that is, they perform many of the same tasks with few variations. Because of this high degree of similarity, most job incumbents grouped together into a single cluster containing three variations of the basic job. Analysis also identified five independent job types, which were small groups too specialized to be grouped in the cluster. The division of jobs within the 427X5 career ladder is illustrated in Figure 1 and listed below. The group (GRP) number refers to computer printed information; the number of personnel in the group is represented by the letter N:

I. STRUCTURAL REPAIR PERSONNEL CLUSTER (GRP106, N=1969)

II. MOBILITY SUPPORT PERSONNEL (GRP239, N=19)

III. RESIDENT COURSE INSTRUCTORS (GRP050,N=17)

IV. SUPERVISORY PERSONNEL (GRP264, N=74)

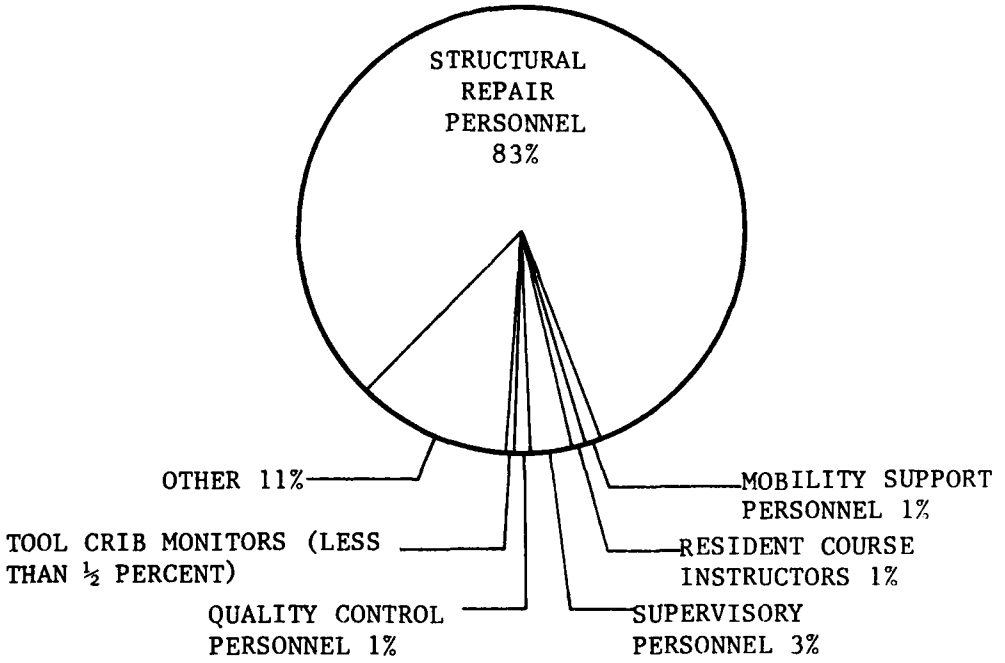
V. QUALITY CONTROL PERSONNEL (GRP075, N=16)

VI. TOOL CRIB MONITORS (GRP322, N=6)

Eighty-nine percent of the survey respondents were grouped into the above cluster and independent job types. The remaining 11 percent did not perform functions similar enough to form other groups, and the functions they did perform were too dissimilar or limited to be grouped with other job types. These personnel described themselves using such titles as Sheet Metal Fabrication, Shop Clerk, and Time Accountant.

FIGURE 1

427X5 CAREER LADDER DISTRIBUTION
(PERCENT MEMBERS RESPONDING)



Group Descriptions

The following paragraphs briefly describe the cluster and independent job types identified in the analysis. Tables 5 and 6 provide selected background and job satisfaction data for these groups. Appendix A contains more detailed listings of representative tasks for these groups.

I. STRUCTURAL REPAIR PERSONNEL (GRP106). This cluster contains 1,969 airmen, accounting for 83 percent of the sample. While personnel in this cluster perform the full range of airframe repair tasks, the core job concentrates on fastener installation and removal tasks, and on aircraft metal and bonded honeycomb repairs. All members perform tasks in these two functions, which account for over 60 percent of the total job time. The average number of tasks for personnel in this cluster is 117. The unitary character of this group is demonstrated by the fact that 80 percent or more of the personnel perform 36 common tasks, and 70 percent or more of the personnel perform 57 common tasks, of which the following are representative:

drill out and remove rivets
drill rivet holes
cut and trim sheet metal
form and trim metal patches or reinforcements
cut tubing
prepare sealant compounds
finish fiberglass repairs to smooth surface

For a more complete list, see Appendix A, Table I. The majority of personnel in this cluster are in TAC (30 percent), SAC (22 percent), and MAC (21 percent). These percentages are representative of the distribution of MAJCOMs in the entire sample. All three skill levels are represented in this cluster, and the majority of personnel (59 percent) are qualified at the 5-skill level. Airmen in this cluster average about 4 years in the career field, with over 60 percent in their first enlistment. In this cluster, job satisfaction seems to be high, with over 75 percent of the respondents reporting high job interest, good utilization of talents and training, and high satisfaction with the sense of accomplishment they gain from their work.

While this cluster represents the core job of the Airframe Repair Specialty, analysis showed three variations of this core job. The first variation is the job of the journeyman, the general sheet metal job. These journeymen perform the more technical structural repair tasks noted above for the entire cluster, but perform very few supervisory tasks. They also spend a slightly greater amount of their total job time on fiberglass structural and honeycomb core repairs. Personnel performing this variation average 118 tasks. Members average about 2½ years time in their present job, with 63 percent in their first enlistment.

The second job variation in this cluster is performed by depot and flightline workers. These workers concentrate on repairs that involve removing and installing aircraft patches or parts, and they perform a much

smaller number of tubing or fiberglass structural repair tasks. Thus, personnel who perform this variation specialize on fewer tasks, averaging only 57 tasks. In fact, nearly 50 percent of this group's total job time is spent performing only 26 tasks. Representative tasks include the following:

drill out and remove rivets
install and remove solid shank rivets
lay out rivet patterns
make entries on AFTO Forms 349 (Maintenance Data Collection Record)
remove damaged areas by chain drilling
trim and fit panels
align rivet or special fastener holes
install or remove gang channel nut plates

Personnel performing this job variation work mainly in flightline or phase dock assignments, or in depot assignments. On the average, these airmen are more junior. The average grade is only slightly above E-3 and over 40 percent of the members are qualified at the 3-skill level, with 53 percent qualified at the 5-skill level. Fifty-eight percent are in the first year of their present assignment, and 47 percent are in their first job in the service, with 81 percent in their first enlistment. For this job variation, the major users are TAC (34 percent), MAC (20 percent), and AFLC (18 percent).

The third variation of the core job is the technician-supervisor. In addition to the tasks of the core job of the cluster, personnel in this group also perform many supervisory tasks. Because they are performing both technical tasks and supervisory tasks, members average 209 tasks, a much greater number than either the journeyman or flightline or depot worker. These supervisor-technicians still spend 40 percent of their total job time on aircraft metal and bonded honeycomb repairs, and on fastener installation and removal tasks. Representative tasks for this group include the following:

supervise airframe repair specialists (AFSC 42755)
inspect fabricated or repaired items
interpret drawings and blueprints
develop or improve work methods or procedures
counsel individuals on training progress
lay out rivet patterns
inspect and classify fiberglass laminated damage
select aircraft tubing materials
install flush skin patches

Personnel performing this variation are more experienced. They have an average grade of just above E-5, and 61 percent are qualified at the 7-skill level. Members average 2 years in their present job, and over 81 percent have more than 8 years total active federal military service.

II. MOBILITY SUPPORT PERSONNEL (GRP239). This independent job type is composed of 19 airmen (1 percent of the sample) who inventory and repair Bare Base buildings. Personnel in this group perform an average of 49 tasks, while 43 percent of their total job is spent performing metal and bonded honeycomb repairs (often replacing honeycomb with balsa wood), and 30 percent is spent performing tasks involving fastener installation and removal. Personnel in this group do not work on aircraft. Many of the tasks they perform are similar to those required for airframe repair, but Mobility Support Personnel perform these tasks on transportable buildings. Representative tasks include the following:

install nonflush skin patches
drill rivet holes
prepare adhesives
drill out and remove rivets
apply corrosion preventatives
clean damaged area with methylethyl ketone (MEK)
inspect and classify metal bonded honeycomb core damage
prepare surfaces for sealant application

All personnel in this group are assigned to the 4449 Mobility Support Squadron at Holloman AFB, New Mexico. On the average, members of this group are more junior than members of other job types. The average grade is about E-3; 5 members are qualified at the 3-skill level and 14 members are qualified at the 5-skill level. Sixty-eight percent have 1 year or less in their present job, and 42 percent are in their first assignment, with 84 percent in their first enlistment.

One extremely important difference in this group particularly stands out: these members are dissatisfied with the job they are performing. While personnel in the other groups show, on the average, very high job satisfaction, personnel in the Mobility Support group contrast sharply. On the self-report job attitude scales, 58 percent find their job extremely to fairly dull, with 16 percent reporting their job as just "so-so"; 84 percent report their job utilizes their talents not at all or very little; 74 percent report their job utilizes their training not at all or very little; and 47 percent report they are extremely to slightly dissatisfied with the sense of accomplishment gained from their work, with 32 percent reporting neutral feelings toward their work. Over 47 percent of the members report either they definitely will not reenlist or they probably will not reenlist.

Survey information about this squadron indicates there may be problems with Air Force [illegible]on of personnel and training. Thirty-two airmen in the sample were [illegible] the 4449 MOBSS. Although the job type previously described pertains [illegible]e 19 airmen that grouped together in the analysis, the job satisfaction [illegible]ntages are similar for this entire squadron of 427X5 personnel. In addition, many 4449 MOBSS personnel took extra time to express their opinions or give suggestions with write-in comments. Many of the comments expressed dissatisfaction, but in a very matter-of-fact way, making practical comments and suggestions. For example, two respondents address the issue of skill-level qualification:

"Our 3-levels are upgraded on 39-1 requirements for honeycomb repair and locally assigned tasks. We cannot train 'qualified' 5-level aircraft repair specialists by working on aircraft-type structures only. It would benefit a quality force to make 4449 MOBSS a control tour of qualified 5-levels."

"Current duties do not offer members an opportunity to receive full benefit of 5-level upgrade. Most of the tasks outlined in JQS are not accurate for this duty section."

A second area addressed by comments is the additional training required due to this lack of aircraft experience in the 4449 MOBSS, as the following two respondents state:

"As you can see, sheet metal men in MOBSS do not do much of what they were trained for. If they spend their entire first tour here, when they finally get to an aircraft squadron they will be of no use, a waste of valuable Air Force dollars. For this reason I feel that MOBSS might benefit the Air Force and its personnel by being a controlled tour."

"I don't feel we, being a quality force, should send a 3-level to this place...they can't learn on-hands experience on aircraft. I feel it is a waste of good money and talent. When this 3-level leaves as a 5-level and gets out into field maintenance, he basically has to learn all over again. I feel it would be in the best interest of the USAF to send nothing but 5-level and above personnel to MOBSS; that way you...don't waste time on training twice.

A third area the comments addressed is the unfairness to personnel in not performing the job they were promised and for which they were trained, as suggested by the following two airmen:

"I am very dissatisfied with the Air Force tech school that I was sent to. I was trained to work on aircraft and I am working on buildings...I have been told by personnel in the shop that if I had not gone to the Airframe Tech School, I would not know what I am doing. On the other hand, we have corrosion personnel doing repairs which I was sent 10 weeks to tech school to learn."

"In this squadron, I feel only 5-level or above specialists should be assigned here. The 3-levels

that are assigned from technical school are very disappointed and not very eager to learn their job. It seems to give them a bad attitude toward the Air Force itself. They have the idea of working on aircraft when they get out of tech school. A lot of the airmen in the squadron will probably not reenlist."

These comments point out that personnel assigned to the 4449 MOBSS cannot fully use the training they received in the Airframe Repair Specialty technical school. As a result, the money and time spent on their training is not used as well as it could be while they are assigned there. In addition, if assigned as a 3-skill level they cannot receive the training to adequately qualify for the 5-skill level, and they must be retrained upon assignment to a squadron with aircraft.

III. RESIDENT COURSE INSTRUCTORS (GRP050). This independent job type contains 17 members (1 percent of the sample). Fifteen of these members are assigned to Chanute AFB IL and instruct in the Airframe Repair Specialty technical school. (Of the remaining two members, one is an instructor at the Inter American Air Forces Academy, and one describes himself as a shift leader.) Thus, they concentrate on training, spending 26 percent of the total job time performing training tasks. In addition, they also spend much time performing technical tasks involving aircraft metal and bonded honeycomb (23 percent total job time) and aircraft fasteners (16 percent total job time). The average number of tasks for this group is only 35, with as few as 17 tasks accounting for half of their total job time. Representative tasks for this group include the following:

conduct resident course classroom training
inspect fabricated or repaired items
score tests
inspect fasteners for flush installation
secure sheet metal with cleco fasteners

Personnel in this group have an average grade of almost E-5, with 53 percent qualified at the 5-skill level and 47 percent qualified at the 7-skill level. The average time in their present job is just over 2 years, and 77 percent are in second or career enlistments.

IV. SUPERVISORY PERSONNEL (GRP264). The 74 members in this group (3 percent of the sample) spend, on the average, 83 percent of their time performing supervisory and administrative tasks; the average number of people supervised is 12. Members perform very few, if any, technical tasks and average 74 tasks. The following tasks are representative:

supervise Airframe Repair Specialists (AFSC 42755)
write airman performance reports (APR)
determine work priorities
educate compliance with performance standards
plan or schedule work assignments
evaluate OJT trainees

Personnel in this group are the more experienced of the career field. The average grade is almost E-7, and all but one member (qualified at the 5-skill level) are qualified at the 7-skill level. Although 47 percent have 1 year or less time on their present job, members average over 16 years total active federal military service.

V. QUALITY CONTROL PERSONNEL (GRP075). This group contains 16 members (1 percent of the sample). Nearly all identify themselves as Quality Control or Evaluation personnel. On the average, this group spends half of the total job time on only 17 tasks, most of which involve inspection or evaluation. Representative tasks include the following:

inspect fabricated or repaired items
inspect aircraft for structural failures or malfunctions
inspect fiberglass repairs for proper bond
evaluate compliance with performance standards
make entries on AFTO Forms 349 (Maintenance Data Collection Record)
inspect fasteners for flush installation
inspect tubing for damage

Personnel in this independent job type are also more senior. The average grade is E-6, and all but one member (again, a 5-skill level) is qualified at the 7-skill level. Members average over 12 years total active federal military service, with none in their first enlistment. The major user of this independent job type is SAC, to which over 62 percent are assigned.

VI. TOOL CRIB MONITORS (GRP322). Most of the six airmen in this group describe themselves as tool crib monitors. Their job consists of tasks involving issue and inventory of tools, with only three tasks accounting for about half of their total job time. The average number of tasks for this group is 9. Some tasks representative of this group's job are the following:

inventory equipment, tools, or supplies
make entries on AF Forms 2005 (Issue/Turn in Request)
make entries on AF Forms 1297 (Temporary Issue Receipt)
maintain unit supply records

Of the six members in this group, two hold the rank of E-3 and four hold the rank of E-4. All are qualified at the 5-skill level, and all are in their first enlistment. Job satisfaction indicators are slightly lower for this group; only half of the members report they find their job interesting and, though 83 percent report their job utilizes their training fairly well to perfectly, half report their job utilizes their talents not at all or very little. Only half of the members are satisfied with the sense of accomplishment they gain from the job, and only half report either they definitely will reenlist or they probably will reenlist.

Comparison of Specialty Jobs

In addition to individual descriptions of each job, a comparison of some differences in the groups helps promote a better understanding of the career ladder structure. As mentioned before, the Airframe Repair Specialty is a very homogeneous career field: airmen in this AFS spend similar amounts of time on many of the same tasks. The analysis did highlight a few variations within the core job, represented in the cluster and between a few independent job types.

The Job Difficulty Index (JDI), which is based on the number of tasks performed and the relative difficulty of these tasks with respect to time spent (see Task Factor Administration section), can be used to compare the complexity of career ladder jobs. For example, Supervisory Personnel have the highest JDI (16.2). The jobs with the lowest JDI were those of the Mobility Support Personnel (6.8) and Tool Crib Monitors (5.1). Both of those jobs are limited and have the largest percentages of first-term personnel. The Structural Repair cluster, overall, represents a job with a JDI of 13.6, very near the average of 13.0. Within the cluster, however, the job variations showed a range of complexity. Beginning with the flightline and depot workers, the JDI is about 7; this job is more limited, with a smaller average number of tasks. The journeyman's job, which represents the core job, as captured by the cluster, is broader in scope and has a JDI of 14.0, close to average. The supervisor-technician variation has the highest JDI (20.1), since members of this group perform managerial functions in addition to the technical duties of the other two variations.

As shown in Table 6, job satisfaction indicators for most groups were very high, indicating a good match between individuals, training, and job characteristics, in general. One area of concern, however, is the job satisfaction of Mobility Support Personnel. The large percentage of this group reporting they find their job extremely to fairly dull (58 percent), their job utilizes their talents and training not at all or fairly little (84 and 74 percent, respectively), they are extremely to slightly dissatisfied (47 percent) or neither satisfied nor dissatisfied (32 percent) with the sense of accomplishment from the job, and they either definitely will not or probably will not reenlist (47 percent percent) indicates a potential problem. As previously discussed, the large number of write-in comments and the nature of those comments suggests the problem may be a result of the utilization of Airframe Repair personnel in this type of repair job. Similarly, job satisfaction indicators for Tool Crib Monitors were also low (see Table 6). In this case, low job satisfaction may result from a job very limited in scope.

In summary, the analysis of this career ladder structure suggests the current classification structure is effective. Except for Mobilty Support Personnel, who are not working on aircraft, individuals are performing the technical tasks which characterize the career ladder and for which they were trained. The high job satisfaction responses of all groups but Mobility Support Personnel and Tool Crib Monitors, indicate, in general, good utilization of personnel in the Airframe Repair Specialty. In addition, the large percentage of individuals grouped in the cluster of Structural Repair Personnel is consistent with the fact that individuals continue to perform highly technical functions as they progress through the skill levels, as discussed in the following section.

TABLE 5

SELECTED BACKGROUND DATA FOR SPECIALTY JOB GROUPS

	CLUSTER	INDEPENDENT JOB TYPES				
	STRUCTURAL REPAIR PERSONNEL	MOBILITY SUPPORT PERSONNEL	RESIDENT COURSE INSTRUCTORS	SUPERVISORY PERSONNEL	QUALITY CONTROL PERSONNEL	TOOL CRIB MONITORS
NUMBER IN GROUP	1,969	19	17	74	16	6
PERCENT OF SAMPLE	83	1%	1%	3%	1%	*
AVERAGE NUMBER OF TASKS	117	49	35	74	31	9
JOB DIFFICULTY INDEX (JDI)	13.6	6.8	9.1	16.2	11.0	5.1
MAJCOM: (PERCENT)						
TAC	30%	100%	6%	24%	13%	33%
MAC	21%	-	-	24%	19%	50%
SAC	22%	-	-	20%	62%	17%
USAFE	9%	-	-	10%	-	-
AFLC	5%	-	-	5%	-	-
ATC	6%	-	94%	11%	6%	-
OTHER	7%	-	-	5%	-	-
DAFSC: (PERCENT)						
42735	23%	26%	-	-	-	-
42755	59%	74%	53%	1%	6%	100%
42775	18%	-	47%	96%	94%	-
42795	-	-	-	3%	-	-
AVERAGE GRADE	E-4	E-3	E-5	E-7	E-6	E-4
AVERAGE TICF (MOS)	50	24	73	177	137	25
AVERAGE TAFMS (MOS)	59	31	78	196	150	31
PERCENT FIRST ENLISTMENT	61%	84%	23%	-	-	100%

* Less than half of one percent

TABLE 6

JOB SATISFACTION INDICATORS BY SPECIALTY GROUP
(PERCENT MEMBERS RESPONDING)*

	CLUSTER	INDEPENDENT JOB TYPES				
	STRUCTURAL REPAIR PERSONNEL	MOBILITY SUPPORT PERSONNEL	RESIDENT COURSE INSTRUCTORS	SUPERVISORY PERSONNEL	QUALITY CONTROL PERSONNEL	TOOL CRIB MONITORS
EXPRESSED JOB INTEREST:						
DULL	7	58	0	7	6	17
SO-SO	14	16	12	3	18	33
INTERESTING	78	26	88	90	69	50
PERCEIVED USE OF TALENTS:						
LITTLE OR NOT AT ALL	15	84	6	11	12	50
FAIRLY WELL TO PERFECTLY	84	16	94	89	88	33
PERCEIVED USE OF TRAINING:						
LITTLE OR NOT AT ALL	13	74	6	9	12	17
FAIRLY WELL TO PERFECTLY	86	26	94	91	88	83
SENSE OF ACCOMPLISHMENT FROM JOB:						
DISSATISFIED	14	47	6	20	19	33
NEUTRAL	11	32	12	5	19	17
SATISFIED	75	21	82	74	62	50
REENLISTMENT INTENTIONS:						
WILL RETIRE	2	0	0	26	19	0
WILL NOT/PROBABLY WILL NOT REENLIST	30	47	29	7	6	50
WILL/PROBABLY WILL REENLIST	67	53	71	68	75	50

* Columns may not add up to 100 percent due to rounding and no response

ANALYSIS OF DAFSC GROUPS

In addition to analysis of the career ladder structure, an examination of the skill levels is helpful in understanding the Airframe Repair Specialty. The DAFSC analysis compares the skill levels, highlighting differences in the tasks performed at the various skill levels. This information is also useful in evaluating how well career ladder documents, such as AFR 39-1 Specialty Descriptions and the Specialty Training Standard (STS), reflect what career ladder personnel are actually doing in the field.

Because a comparison of duty and task performance between 3- and 5-skill level (42735 and 42755) personnel indicates the jobs they perform are essentially the same, they are discussed as one group in this report. For the distribution of skill-level groups across the career ladder jobs, see Table 7. The relative percent time spent on each duty across the skill level groups is presented in Table 8. As is typically found, personnel spend more relative time on supervisory and administrative duties as they progress to the 7-skill level. The blocked figures in Table 8 demonstrate the added emphasis on supervisory responsibilities at the 7-skill level.

Skill-Level Descriptions

DAFSC 42735/42755. There are 1,809 airmen in the sample (77 percent) qualified at a 3- or 5- skill level. On the average, they perform 102 tasks, with 51 tasks accounting for half of their total job time. The work at these skill levels consists primarily of technical tasks, concentrating in fastener installation and removal duties and in aircraft metal and bonded honeycomb repairs. This fact is consistent with the previous discussion of these two duties as the main job in the AFS 427X5. Representative tasks for this group are shown in Table 9. Duties involving supervisory tasks account for only 7 percent of members' relative job time, reflective of the fact that only about 17 percent of the group reports acting as supervisors. Nearly three-quarters of the group (73 percent) are in their first enlistment, with only 20 percent in their second enlistment. All job satisfaction indicators are very high, and 64 percent report they either probably will or definitely will reenlist.

DAFSC 42775. The 542 7-skill level personnel (23 percent of the survey sample) perform an average of 116 tasks, with 73 tasks accounting for half of their total job time. The slightly greater average number of tasks is reflective of the fact that members of this group continue to perform some of the same technical tasks of the 3- and 5-skill level workers, while increasing the amount of supervisory tasks. For example, 7-skill level personnel, as a group, spend over one-third of their total job time performing tasks related to supervisory functions and an even greater percentage on the more technical functions. Although 79 percent report acting as supervisors, about the same percentages also perform technical tasks representative of specialty. Representative tasks for this group are presented in Table 10.

Note that the tasks performed by 70 to 80 percent of all 7-skill level personnel are mixed; some are very specific metal working tasks, and other tasks performed by especially large percentages are supervisory. These

examples clearly demonstrate the mixed content of the 7-skill level jobs. About 83 percent of DAFSC 42775 personnel are in their third or subsequent enlistment. Again, job satisfaction indicators are very high, and 78 percent report they plan to reenlist or probably will reenlist.

Differences between 42735/42755 and 42775 personnel occur mainly in tasks which are supervisory in nature, since 7-skill level personnel also perform most of the technical tasks of the career field. Representative differences in tasks are presented in Table 11. Note that tasks which a greater percentage of 42735/42755 members perform are still performed by a majority of 42775 members (see Table 11). This finding is consistent with the AFR 39-1 Specialty Description, which states that 42775 personnel continue to perform the general duties of the career field along with supervisory duties.

TABLE 7

DISTRIBUTION OF DAFSC GROUP MEMBERS ACROSS CAREER LADDER CLUSTER AND INDEPENDENT JOB TYPE (NUMBER RESPONDING)

JOB GROUPS	DAFSC 42735/55	DAFSC 42775
I. STRUCTURAL REPAIR PERSONNEL CLUSTER (N=1,969)	1,603	366
II. MOBILITY SUPPORT PERSONNEL (N=19)	19	0
III. RESIDENT COURSE INSTRUCTORS (N=17)	9	8
IV. SUPERVISORY PERSONNEL (N=74)	1	71
V. QUALITY CONTROL PERSONNEL (N=16)	1	15
VI. TOOL CRIB MONITORS (N=6)	6	0
PERCENT NOT GROUPED	170	82
TOTAL	1,809	542

* Less than half of one percent

TABLE 8

RELATIVE PERCENT TIME SPENT ON DUTIES BY DAFSC GROUPS

DUTIES		DAFSC 42735/55 (N=1,809)	DAFSC 42775 (N=542)
A	PLANNING AND ORGANIZING	2	9
B	DIRECTING AND IMPLEMENTING	2	8
C	INSPECTING AND EVALUATING	1	9
D	TRAINING	2	7
E	PREPARING AND MAINTAINING FORMS, RECORDS, AND REPORTS	4	6
F	FASTENER INSTALLATION AND REMOVAL DUTIES	34	20
G	AIRCRAFT METAL AND BONDED HONEYCOMB REPAIRS	28	20
H	FIBERGLASS STRUCTURAL AND HONEYCOMB CORE REPAIRS	9	6
I	ADVANCED COMPOSITE STRUCTURE AND HONEYCOMB CORE REPAIRS	1	1
J	TRANSPARENT PLASTICS REPAIRS	2	2
K	AIRCRAFT CABLE MAINTENANCE	2	2
L	MANUFACTURING TUBING ASSEMBLIES	7	5
M	BALANCING AND ALIGNMENT OF AIRCRAFT STRUCTURES	*	*
N	PERFORMING SEALING FUNCTIONS	4	3
O	PERFORMING CROSS UTILIZATION TRAINING (CUT) FUNCTIONS	2	2
	TOTAL	100	100

* Denotes less than one percent

TABLE 9

REPRESENTATIVE TASKS PERFORMED BY 42735/55 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=1,089)
F110	DRILL OUT AND REMOVE RIVETS	95
F107	COUNTER-SINK RIVET HOLES	94
F140	INSTALL SOLID SHANK RIVETS	94
F111	DRILL RIVET HOLES	93
F162	REMOVE SOLID SHANK RIVETS	91
G216	SECURE SHEET METAL WITH CLECO FASTENERS	91
F136	INSTALL PULL-THRU BLIND RIVETS	91
G218	STOP DRILL CRACKS ON SHEET METAL	89
F143	LAY OUT RIVET PATTERNS	89
F133	INSTALL OR REMOVE NUT PLATES OTHER THAN GANG CHANNEL	88
F112	INSPECT FASTENERS FOR FLUSH INSTALLATION	88
F158	REMOVE PULL-THRU BLIND RIVETS	87
G181	CUT RIVETS	87
G187	FORM AND TRIM METAL PATCHES OR REINFORCEMENTS	86
G205	REMOVE DAMAGED AREAS BY CHAIN DRILLING	86
G179	CUT AND TRIM SHEET METAL	86
F131	INSTALL OR REMOVE HINGES	84
G198	INSTALL NON-FLUSH SKIN PATCHES	83
F139	INSTALL SELF-PLUGGING (MECHANICAL LOCK) BLIND RIVETS	81
G220	TRIM AND FIT PANELS	81
G206	REMOVE DAMAGED AREAS WITH AVIATION SNIPS	80
F165	SMOOTH RIVETS WITH MICROSHAVER	78
G197	INSTALL FLUSH SKIN PATCHES	76
G168	APPLY CORROSION PREVENTATIVES	76
L319	CUT TUBING	76
G167	APPLY AERODYNAMIC SMOOTHING COMPOUNDS	76
G219	TRIM AND FIT DOORS	76
L320	DEBUR TUBING	75
F134	INSTALL OR REMOVE QUICK RELEASE TYPE LATCHES	75
G166	ALIGN RIVET OR SPECIAL FASTENER HOLES	75

TABLE 10

REPRESENTATIVE TASKS PERFORMED BY 42775 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=542)
C61	WRITE AIRMAN PERFORMANCE REPORTS (APR)	81
F112	INSPECT FASTENERS FOR FLUSH INSTALLATION	81
C58	INSPECT FABRICATED OR REPAIRED ITEMS	80
B38	SUPERVISE AIRFRAME REPAIR SPECIALISTS (AFSC 42755)	80
B26	COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	77
A1	ASSIGN PERSONNEL TO DETAILS	76
F110	DRILL OUT AND REMOVE RIVETS	75
F107	COUNTER-SINK RIVET HOLES	75
F111	DRILL RIVET HOLES	75
F140	INSTALL SOLID SHANK RIVETS	74
F143	LAY OUT RIVET PATTERNS	72
F162	REMOVE SOLID SHANK RIVETS	72
G192	INSPECT INSTALLED RIVETS FOR STRUCTURAL DEFORMITIES	72
G190	INSPECT AND CLASSIFY DAMAGE TO AIRCRAFT METAL STRUCTURES OTHER THAN HONEYCOMB CORE	71
G216	SECURE SHEET METAL WITH CLECO FASTENERS	71
F139	INSTALL SELF-PLUGGING (MECHANICAL LOCK) BLIND RIVETS	71
F136	INSTALL PULL-THRU BLIND RIVETS	70
A5	DETERMINE WORK PRIORITIES	70
F133	INSTALL OR REMOVE NUT PLATES OTHER THAN GANG CHANNEL	70
D71	DEMONSTRATE HOW TO LOCATE TECHNICAL INFORMATION	70
D70	COUNSEL INDIVIDUALS ON TRAINING PROGRESS	69
B36	INVENTORY EQUIPMENT, TOOLS, OR SUPPLIES	69
G199	INTERPRET DRAWINGS AND BLUEPRINTS	69
G198	INSTALL NON-FLUSH SKIN PATCHES	68
E97	MAKE ENTRIES ON AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD)	68
G194	INSPECT REPAIRED OR DAMAGED AREA USING HAMMER TAP OR COIN TAP METHOD	68
A6	DEVELOP OR IMPROVE WORK METHODS OR PROCEDURES	68
G218	STOP DRILL CRACKS ON SHEET METAL	67
F158	REMOVE PULL-THRU BLIND RIVETS	67
G205	REMOVE DAMAGED AREAS BY CHAIN DRILLING	67

TABLE 11

REPRESENTATIVE TASK DIFFERENCES BETWEEN 42735/42755 AND 42775 PERSONNEL (PERCENT MEMBERS PERFORMING)

TASKS		DAFSC 42735/55 (N=1,809)	DAFSC 42775 (N=542)	DIFFERENCE
G172	CLEAN REPAIR SURFACE BY SOLVENT METHOD	74	51	+23
G181	CUT RIVETS	87	64	+23
G218	STOP DRILL CRACKS ON SHEET METAL	89	67	+22
.	.	.	.	.
.	.	.	.	.
.	.	.	.	.
A5	DETERMINE WORK PRIORITIES	29	70	-41
D71	DEMONSTRATE HOW TO LOCATE TECHNICAL INFORMATION	27	69	-42
D78	EVALUATE OJT TRAINEES	10	52	-42
A6	DEVELOP OR IMPROVE WORK METHODS OR PROCEDURES	10	52	-42
A19	PLAN OR SCHEDULE WORK ASSIGNMENTS	12	57	-45
C58	INSPECT FABRICATED OR REPAIRED ITEMS	35	80	-45
C47	EVALUATE COMPLIANCE WITH PERFORMANCE STANDARDS	12	58	-46
B35	INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	12	58	-46
A1	ASSIGN PERSONNEL TO DETAILS	29	76	-47
D70	COUNSEL INDIVIDUALS ON TRAINING PROGRESS	16	69	-53
B38	SUPERVISE AIRFRAME REPAIR SPECIALISTS (AFSC 42755)	23	80	-57
B26	COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	17	77	-60
C61	WRITE AIRMAN PERFORMANCE REPORTS (APR)	15	81	-66

TABLE 12

RELATIVE PERCENT TIME SPENT ON DUTIES BY TAFMS GROUPS

DUTIES		TAFMS (MONTHS) 1-48 (N=1,327)	49-96 (N=448)	97+ (N=567)
A	PLANNING AND ORGANIZING	1	3	8
B	DIRECTING AND IMPLEMENTING	1	4	8
C	INSPECTING AND EVALUATING	1	3	9
D	TRAINING	1	5	6
E	PREPARING AND MAINTAINING FORMS, RECORDS, AND REPORTS	3	5	6
F	FASTENER INSTALLATION AND REMOVAL DUTIES	35	29	21
G	AIRCRAFT METAL AND BONDED HONEYCOMB REPAIRS	29	25	20
H	FIBERGLASS STRUCTURAL AND HONEYCOMB CORE REPAIRS	9	8	6
I	ADVANCED COMPOSITE STRUCTURE AND HONEYCOMB CORE REPAIRS	1	1	1
J	TRANSPARENT PLASTICS REPAIRS	2	2	2
K	AIRCRAFT CABLE MAINTENANCE	2	2	2
L	MANUFACTURING TUBING ASSEMBLIES	7	6	5
M	BALANCING AND ALIGNMENT OF AIRCRAFT STRUCTURES	*	*	*
N	PERFORMING SEALING FUNCTIONS	4	4	2
O	PERFORMING CROSS UTILIZATION TRAINING (CUT) FUNCTIONS	2	3	2

* Denotes less than one percent

ANALYSIS OF AFR 39-1 SPECIALTY DESCRIPTIONS

AFR 39-1 Specialty Descriptions are intended to provide a broad overview of the duties and tasks performed in each skill level of a specialty. When compared with 7-skill level survey data, the specialty description, dated 1 January 1982, accurately reflects the responsibilities of that skill level. According to survey data, and consistent with the Airframe Repair Technician (AFSC 42775) Specialty Description, personnel at this skill level have supervisory and inspection responsibilities in addition to the general and technical responsibilities.

When compared with the analysis of the career ladder structure, the AFR 39-1 Specialty Description for the Airframe Repair Specialist (AFSC 42715, 42735, and 42755) generally reflects 3- and 5-skill level duties and responsibilities. Specifically, the specialty summary section specifies that repair, modification, and fabrication performed by the Airframe Repair Specialist involves aircraft structural parts, components, and assemblies. Of the 3- and 5-skill level personnel in the survey sample, however, 29 (about 2 percent) perform work that does not involve aircraft at all. These airmen perform repairs on Bare Base buildings, involving such work as inventorying the buildings and replacing honeycomb with balsa wood.

This group was identified in the analysis of SPECIALTY JOBS as Mobility Support personnel. Their work with Bare Base buildings is inconsistent with the present AFR 39-1 specialty descriptions. Some type of action is needed to transfer this responsibility for Bare Base building repair to a more appropriate specialty.

ANALYSIS OF TAFMS GROUPS

An analysis of total active federal military service (TAFMS) groups provides a description of how jobs within a career ladder change with time and experience. As is typical in most career ladders, performance of duties involving supervisory, managerial, and training tasks increases as time in service and experience increase (see Table 12). As members spend more time on these duties, the proportion of relative time performing technical tasks decreases slightly. Even for personnel in their third or subsequent enlistment, over 41 percent of total job time is spent on technical tasks involving fastener installation and removal, and structural and honeycomb repairs. In Table 12, the blocked figures indicate that responsibility for supervisory functions increases with time in service, while responsibility for technical functions remains about the same.

First-Enlistment Personnel

In this study, 1,322 members are in their first enlistment (1-48 months TAFMS), accounting for 57 percent of the survey sample. First-enlistment personnel, as a group, perform a full range of technical tasks, but concentrate on fastener installation and removal, and aircraft metal and bonded honeycomb repairs. They average 100 tasks. Representative tasks are listed in Table 13.

Nearly two-thirds of these airmen are in their first job, and over two-thirds hold the grade of E-3, with over 99 percent at E-4 or below. The distribution of first-term personnel across specialty jobs is shown in Figure 2. Comparing Figure 1 to Figure 2 shows that the percentage in the Structural Repair Personnel Cluster is slightly greater for first-term personnel than for the career ladder as a whole, due to the larger size of the cluster compared to the other groups and to the supervisory characteristics of some independent job types.

Assignment of first-enlistment personnel to jobs with a narrow or specialized range of tasks generates concern in this study. For example, Mobility Support Personnel perform a limited number of tasks in a specialized job, and most are in their first enlistment (84 percent). The same is true for Tool Crib Monitors (9 tasks, 100 percent first-enlistment personnel).

Because such jobs are so limited in scope and many skills are not used, many tasks once learned in technical training school must be taught again through increased OJT upon reassignment. Assignment of first-term technical school graduates to jobs involving more variety would reinforce school training and allow better understanding and implementation of that training. Assignments to a mobility support squadron, then, might be better considered subsequent to first enlistment.

Job Satisfaction

By looking at group perceptions of jobs and similar data for comparative groups, managers may gain a better understanding of some of the factors affecting the job performance of airmen in the career field. This information was gathered through five inventory job attitude questions covering job interest, perceived utilization of talents and training, sense of accomplishment, and reenlistment intentions. Table 14 presents this information for TAFMS groups in AFS 427X5 and a comparative sample of mission equipment maintenance AFSs surveyed in 1982.

Comparisons of these groups show that job satisfaction indicators for all 427X5 TAFMS groups were at least comparable to and, in almost every case, much higher than those for the comparative sample. Reenlistment intentions were also much higher and increased as time in service increased. These responses indicate that, for the most part, airframe repair personnel are satisfied with their jobs.

FIGURE 2

DISTRIBUTION OF FIRST-ENLISTMENT PERSONNEL ACROSS JOB SPECIALTY GROUPS
(PERCENT MEMBERS PERFORMING)

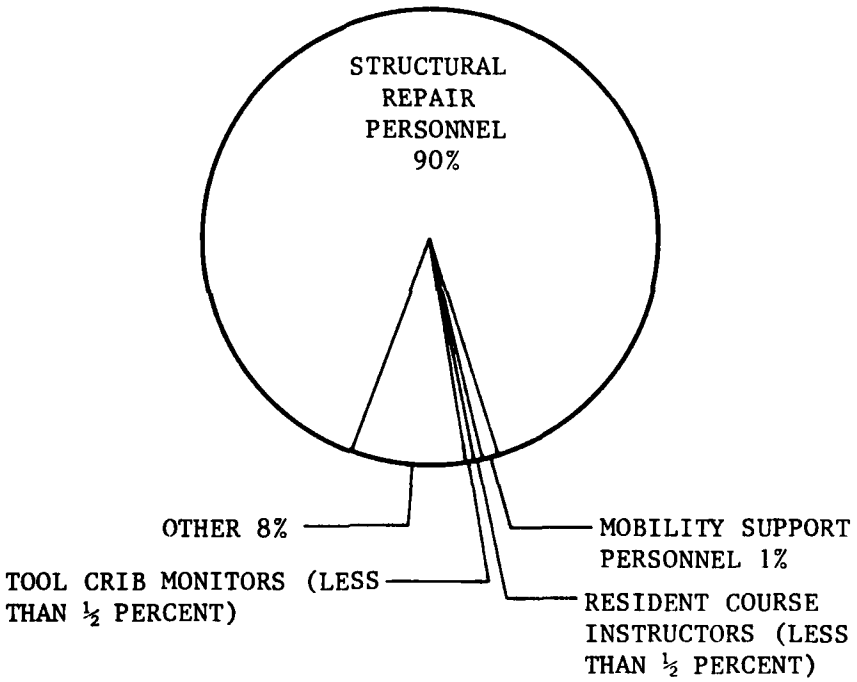


TABLE 13

REPRESENTATIVE TASKS PERFORMED BY FIRST-ENLISTMENT PERSONNEL
(1-48 MONTHS TAFMS)

TASKS		PERCENT MEMBERS PERFORMING (N=1327)
F110	DRILL OUT AND REMOVE RIVETS	96
F107	COUNTER-SINK RIVET HOLES	95
F140	INSTALL SOLID SHANK RIVETS	95
F111	DRILL RIVET HOLES	94
F162	REMOVE SOLID SHANK RIVETS	92
G216	SECURE SHEET METAL WITH CLECO FASTENERS	92
F136	INSTALL PULL-THRU BLIND RIVETS	92
F143	LAY OUT RIVET PATTERNS	90
G218	STOP DRILL CRACKS ON SHEET METAL	90
F112	INSPECT FASTENERS FOR FLUSH INSTALLATION	89
F158	REMOVE PULL-BLIND RIVETS	89
F133	INSTALL OR REMOVE NUT PLATES OTHER THAN GANG CHANNEL	89
G181	CUT RIVETS	89
G179	CUT AND TRIM SHEET METAL	88
G205	REMOVE DAMAGED AREAS BY CHAIN DRILLING	88
G187	FORM AND TRIM METAL PATCHES OR REINFORCEMENTS	87
F131	INSTALL OR REMOVE HINGES	86
G198	INSTALL NON-FLUSH SKIN PATCHES	84
G220	TRIM AND FIT PANELS	83
F139	INSTALL SELF-PLUGGING (MECHANICAL LOCK) BLIND RIVETS	81
G206	REMOVE DAMAGED AREAS WITH AVIATION SNIPS	81
F165	SMOOTH RIVETS WITH MICROSHAVER	80
G197	INSTALL FLUSH SKIN PATCHES	78
G168	APPLY CORROSION PREVENTATIVES	77
G167	APPLY AERODYNAMIC SMOOTHING COMPOUNDS	77
F134	INSTALL OR REMOVE QUICK RELEASE TYPE LATCHES	77
L319	CUT TUBING	77
G166	ALIGN RIVET OR SPECIAL FASTENER HOLES	77
G219	TRIM AND FIT DOORS	76
L320	DEBUR TUBING	76
H225	CLEAN DAMAGED AREA WITH METHYL ETHYL KETONE (MEK)	76

TABLE 14

JOB SATISFACTION INDICATORS BY TAFMS GROUPS
(PERCENT MEMBERS RESPONDING)*

	1-48 MONTHS TAFMS		49-96 MONTHS TAFMS		97+ MONTHS TAFMS	
	427X5 (N=1,327)	COMPARATIVE SAMPLE** (N=1,600)	427X5 (N=448)	COMPARATIVE SAMPLE** (N=859)	427X5 (N=567)	COMPARATIVE SAMPLE** (N=1,435)
EXPRESSED JOB INTEREST:						
DULL	9	13	10	12	6	10
SO-SO	14	16	17	18	13	15
INTERESTING	77	69	72	67	80	73
PERCEIVED USE OF TALENTS:						
LITTLE OR NOT AT ALL	17	23	20	21	16	18
FAIRLY WELL TO PERFECTLY	83	77	79	79	84	82
PERCEIVED USE OF TRAINING:						
LITTLE OR NOT AT ALL	14	21	17	23	16	24
FAIRLY WELL TO PERFECTLY	85	79	82	76	84	75
SENSE OF ACCOMPLISHMENT:						
DISSATISFIED	12	20	20	23	18	23
NEUTRAL	12	14	12	12	9	9
SATISFIED	76	65	68	64	73	67
REENLISTMENT INTENTIONS:						
WILL RETIRE	***	***	***	***	14	18
WILL NOT/PROBABLY WILL NOT REENLIST	40	59	23	44	6	14
WILL/PROBABLY WILL REENLIST	59	40	76	54	80	66

* Columns may not equal 100 percent due to nonresponse and rounding
** Comparative sample of mission equipment maintenance career ladders surveyed in 1982, including AFSs 30XXX, 31XXX, 32XXX, 34XXX, 36XXX, 40XXX, 42XXX, 43XXX, 44XXX, and 46XXX
*** Less than one-half percent

TRAINING ANALYSIS

An especially important use of occupational survey data is in assisting the development of training programs that are relevant for personnel working in their first assignments. Factors such as percent of first-job (1-24 months TAFMS) or first-enlistment (1-48 months TAFMS) personnel performing tasks, and ratings of training emphasis or task difficulty, may be used in evaluating training documents. Technical school personnel from the Chanute Technical Training Center, Chanute AFB IL, matched inventory tasks to appropriate sections of the Specialty Training Standard (STS) and Plan of Instruction (POI) for the 427X5 career ladder. A computer listing displaying the percent members performing and training emphasis and task difficulty ratings for each task has been forwarded to the technical school for use in any further detailed review of training documents. A summary of that information is given below.

Training Emphasis

To provide a perspective on the types of tasks which are among the most important for training, Table 15 lists the 20 tasks rated by senior airframe repair technicians as highest in importance for first-enlistment training as indicated by TE ratings (which are explained in the Task Factor Administration section in the INTRODUCTION of this report). Note that all but two of these tasks are performed by a majority of first-enlistment personnel, and even these two are performed by over 40 percent of first-enlistment personnel.

Training emphasis ratings can be helpful in determining whether or not personnel are being trained on what they are actually doing in the field. For example, all of the tasks listed in Table 15 are included in the main job of this career field, and they are covered in the basic course. There are, however, seven tasks rated high in training emphasis which are not covered by the POI. These tasks will be discussed later in a more complete evaluation of the POI. Training emphasis and task difficulty ratings, as well as percentages of personnel performing tasks, provide a means for evaluating the effectiveness of such training documents as the STS and POI.

TABLE 15

EXAMPLES OF TASKS IMPORTANT FOR TRAINING

TASKS		TRAINING EMPHASIS*	FIRST-ENLISTMENT (N=1,327)	TOTAL SAMPLE (N=2,356)	TASK DIFFICULTY**
G214	RESEARCH -3 TECHNICAL ORDER FOR EXACT REPAIR PROCEDURES ON METAL BONDED HONEYCOMB STRUCTURES	6.60	56	58	5.06
F143	LAYOUT RIVET PATTERNS	6.52	90	85	4.70
G197	INSTALL FLUSH SKIN PATCHES	6.45	78	73	5.12
E97	MAKE ENTRIES ON AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD)	6.43	70	70	4.15
G199	INTERPRET DRAWINGS AND BLUEPRINTS	6.41	57	61	6.00
F110	DRILL OUT AND REMOVE RIVETS	6.38	96	91	3.52
F140	INSTALL SOLID SHANK RIVETS	6.28	95	89	3.83
F107	COUNTER-SINK RIVET HOLES	6.24	95	90	3.73
F154	REMOVE JO-BOLT FASTENERS	6.22	75	70	4.58
G198	INSTALL NON-FLUSH SKIN PATCHES	6.22	84	79	4.41
F111	DRILL RIVET HOLES	6.17	94	89	3.41
G200	LAY OUT SHEET METAL MATERIALS FOR LOCAL MANUFACTURING	6.12	69	67	5.30
G220	TRIM AND FIT PANELS	6.12	83	77	5.03
G219	TRIM AND FIT DOORS	6.09	76	72	5.06
K313	TEST SWAGED TERMINALS USING PULL TESTER	6.09	43	41	5.02
L317	BEND TUBING USING PRODUCTION TUBE BENDERS	6.09	58	55	5.95
K312	SWAGE CABLE TERMINALS USING PNEUMATIC CABLE SWAGER	6.02	49	47	5.27
L321	DOUBLE FLAIR TUBING	6.02	59	57	4.85
F112	INSPECT FASTENERS FOR FLUSH INSTALLATION	6.00	89	86	3.49
F123	INSTALL JO-BOLT FASTENERS	5.95	74	70	3.90

* Tasks rated above 4.98 are high in training emphasis
** Task difficulty rating of 5.00 is average

Note: All above tasks are covered in the basic course

Specialty Training Standard (STS)

A comprehensive review of STS 427X5, dated April 1979, was made to compare STS items to survey data. To evaluate the STS, which provides comprehensive coverage of the tasks performed by personnel in the field, survey data was matched to significant paragraphs or subparagraphs; STS paragraphs covering only knowledge areas were not evaluated. In the analysis, two major areas stood out as warranting review.

The first area concerns items involving composite repairs, contained in subparagraphs 10d(1)-(3). Survey task information matched to these STS items indicates they should be reviewed to determine if proficiency codes for the 3-skill level (currently a dash) should be changed. For example, the percent of first-job (1-24 months TAFMS) and first-enlistment (1-48 months TAFMS) personnel performing these tasks is nearly the same as (and in some cases, greater than) the percent of 5- and 7-skill level personnel performing these tasks, for whom the proficiency codes are 3c and 4c, respectively.

The ratings for composite tasks are above average for both training emphasis and task difficulty, indicating that training for first-enlistment personnel should be considered. In addition, the percentages of first-job or first-enlistment personnel performing four of the tasks (see Table 16) are high enough to consider these tasks for training. Although the percentages range from only 19-38, the increasing use of composites may increase these percentages. Also, these percentages are sometimes greater when considered by MAJCOM groups (see Table 17).

Survey background information on work with composites also supports a review of the proficiency codes for these items. One of the background questions asked the job incumbents to identify the types of advanced composite materials they repair. Trends in the analysis of this question (see Table 18) indicate that training in composite repairs prior to the first assignment should be considered. For example, the percentages of first-job and first-enlistment personnel performing repairs on boron and graphite composites are at least as great as the percentages of second and subsequent enlistment personnel, and even greater when that work involves honeycomb. The same trend is evident among skill-level groups. Also, an examination of first-enlistment personnel by MAJCOM groups shows a greater percentage of first-enlistment personnel in TAC, USAFE, PACAF, and AAC (the tactical air forces) performing advanced composite repairs. There is, however, a small percentage performing composite repairs across other MAJCOMs, indicating that first-enlistment personnel may be assigned to a job involving composite repairs in any MAJCOM (Table 20 presents this information). Furthermore, responses to a background question on career field courses indicate that only a small percentage of personnel are receiving training in repair of composite materials, and the opportunity to receive that training is not as great for first-job or first-enlistment personnel, even though an equal or higher percentage of these personnel are performing composite repairs.

Trends in survey background information, as well as in survey task information matched to STS items, support the need for training on composite materials before first assignment. Subject-matter specialists and training

personnel should consider this information to determine possible inclusion of composite repair training in the basic course or possibly in a trailer course for personnel entering assignment with the tactical air forces (TAF).

The second major area that should be reviewed concerns items that require inspecting and classifying. These items were not given a proficiency code for the 3-skill level. Several items (subparagraphs 9b, c, d, and e; 10a(1), b(1), b(2), c(1), c(2), and d(1); 13a, b, d, e, f, and g) were matched to tasks that involved inspecting and classifying parts, damage, or repairs. Six of these tasks were performed by over 30 percent of first-job or first-enlistment personnel, with one performed by over 50 percent. The same percentages are true by skill level: six tasks involving inspecting and classifying are performed by over 30 percent of 3-skill level personnel, with one performed by over 62 percent (see Table 22 for examples of these tasks). In addition, most of these tasks had high TE and above average TD ratings, indicating that they should be considered for inclusion in the 3ABR42735 course. An examination of the Plan of Instruction (POI) for this course shows that many of these tasks are taught as part of repair procedures, although they were not given a proficiency code for 3-skill level personnel in the STS. Based on this information, subject-matter specialists and training personnel should review these items in the STS to determine if they should be given a proficiency code, since they are performed by 3-skill level personnel. Due to the nature of these tasks, another possibility may be to not allow 3-skill level personnel to perform inspection and/or classification tasks. This same concern was pointed out in the last OSR (February 1976), which stated that 15 to 37 percent of first-job personnel indicated performing tasks related to inspection of aircraft and structural components. As discussed above, this percentage has increased, indicating the problem has not been resolved.

TABLE 16

COMPOSITE REPAIR TASKS WITH HIGHEST PERCENTAGES PERFORMING

TASKS		FIRST-JOB (N=651)	FIRST-ENLISTMENT (N=1,327)	5-SKILL LEVEL (N=1,297)	7-SKILL LEVEL (N=542)	TNG EMPH*	TASK DIFF**
I257	PERFORM MINOR SURFACE DAMAGE OR DENT REPAIRS WITH STRUCTURAL ADHESIVE	37	38	37	25	3.57	4.95
I259	REMOVE DAMAGED COMPOSITE AREAS WITH HIGH SPEED ROUTERS	19	19	16	10	3.64	5.99
I263	RESEARCH -3 TECHNICAL ORDER FOR EXACT REPAIR PROCEDURES ON ADVANCED COMPOSITES	19	19	19	16	4.43	5.31
I264	WEAR PROTECTIVE CLOTHING DURING COMPOSITE DAMAGE REPAIR	20	20	18	12	4.24	3.82

* Average training emphasis rating is 3.17; high training emphasis is 4.98
** Average task difficulty is 5.00

TABLE 17

COMPOSITE REPAIR TASKS WITH HIGHEST PERCENTAGES PERFORMING
(FIRST-ENLISTMENT PERSONNEL BY MAJCOM*)

TASKS		ALL FIRST-ENLISTMENT (N=1,327)	TAC (N=393)	USAFE (N=119)	MAC (N=320)	SAC (N=261)	ATC (N=96)	AFLC (N=66)
I249	COORDINATE DAMAGE INSPECTION WITH NON-DESTRUCTIVE INSPECTION (NDI) SECTION FOR ADVANCED COMPOSITE REPAIR	10	15	10	6	6	9	8
I250	CURE ADVANCED COMPOSITE REPAIRS USING HEAT-BLANKET-VACUUM METHOD	10	14	12	11	3	2	5
I256	PERFORM EVALUATION AND CLASSIFICATION OF DAMAGED COMPOSITE AREA	8	15	10	7	2	4	2
I257	PERFORM MINOR SURFACE DAMAGE OR DENT REPAIRS WITH STRUCTURAL ADHESIVE	38	45	44	36	34	34	14
I259	REMOVE DAMAGED COMPOSITE AREAS WITH HIGH SPEED ROUTERS	19	23	15	17	23	19	8
I263	RESEARCH -3 TECHNICAL ORDER FOR EXACT REPAIR PROCEDURES ON ADVANCED COMPOSITES	19	26	21	17	17	10	6
I264	WEAR PROTECTIVE CLOTHING DURING COMPOSITE DAMAGE REPAIR	20	25	24	16	16	15	8

* Only those MAJCOMS with over 5 percent of the sample are presented

TABLE 18

SELECTED BACKGROUND INFORMATION AND COMPOSITE REPAIRS
(PERCENT MEMBERS)

		DAFSC GROUPS			TAFMS GROUPS			
TYPE OF COMPOSITE MATERIAL REPAIRED	TOTAL SAMPLE (N=2,356)	3-SKILL LEVEL (N=512)	5-SKILL LEVEL (N=1,297)	7-SKILL LEVEL (N=542)	1-24 MONTHS (N=651)	1-48 MONTHS (N=1,327)	49-96 MONTHS (N=448)	97+ MONTHS (N=567)
NONE	58	54	58	64	53	55	62	63
BORON COMPOSITE (HONEYCOMB)	17	19	19	12	20	20	15	13
BORON COMPOSITE (NON-HONEYCOMB)	12	12	13	9	13	13	10	9
GRAPHITE COMPOSITE (HONEYCOMB)	18	20	18	14	20	20	17	14
GRAPHITE COMPOSITE (NON-HONEYCOMB)	13	14	13	13	13	14	12	12
CAREER FIELD COURSES COMPLETED								
4AST42775 REPAIR OF COMPOSITE MATERIALS (F-16)	6	2	5	11	2	3	9	10

TABLE 19

SELECTED BACKGROUND INFORMATION FOR FIRST-ENLISTMENT PERSONNEL BY MAJCOM
(PERCENT MEMBERS)

TYPES OF COMPOSITE MATERIAL REPAIRED	TAC (N=393)	USAFE (N=119)	PACAF (N=31)	AAC (N=11)	MAC (N=320)	SAC (N=261)	ATC (N=96)	AFLC (N=66)	AFSC (N=29)
BORON COMPOSITE (HONEYCOMB)	24	32	32	46	17	12	14	17	17
BORON COMPOSITE (NON-HONEYCOMB)	20	23	26	46	9	7	4	6	7
GRAPHITE COMPOSITE (HONEYCOMB)	28	28	36	64	14	10	8	11	28
GRAPHITE COMPOSITE (NON-HONEYCOMB)	21	25	32	46	8	5	7	5	17

TABLE 20

SELECTED INSPECT AND CLASSIFY TASKS MATCHED TO STS 427X5
(PERCENT MEMBERS PERFORMING)

TASKS		3-SKILL LEVEL (N=512)	5-SKILL LEVEL (N=1,297)	7-SKILL LEVEL (N=542)	TRAINING EMPHASIS*	TASK DIFFICULTY**
G188	INSPECT AIRCRAFT FOR STRUCTURAL FAILURES OR MALFUNCTIONS	39	52	62	4.24	5.81
G189	INSPECT AIRCRAFT SURFACES FOR CORROSION	32	41	50	5.15	5.21
G190	INSPECT AND CLASSIFY DAMAGE TO AIRCRAFT METAL STRUCTURES OTHER THAN HONEYCOMB CORE	38	61	71	5.14	5.50
G191	INSPECT AND CLASSIFY METAL BONDED HONEYCOMB CORE DAMAGE	27	48	60	5.05	5.63
G192	INSPECT INSTALLED RIVETS FOR STRUCTURAL DEFORMITIES	62	73	72	5.26	4.39
G193	INSPECT REPAIRED OR DAMAGED AREA USING CAUSTIC SODA SOLUTION	6	4	7	2.02	5.43
G194	INSPECT REPAIRED OR DAMAGED AREA USING HAMMER TAP OR COIN TAP METHOD	46	68	68	4.90	4.19
G195	INSPECT REPAIRED OR DAMAGED AREA USING SPUR WHEEL METHOD	4	3	8	2.05	4.47
G196	INSPECT SPOT WELDS	19	28	41	3.83	3.98
H234	INSPECT AND CLASSIFY FIBERGLASS HONEYCOMB CORE DAMAGE	24	47	62	5.29	5.43
H235	INSPECT AND CLASSIFY FIBERGLASS LAMINATED DAMAGE	28	49	62	5.09	5.29
H236	INSPECT FIBERGLASS REPAIRS FOR PROPER BOND	33	54	63	5.29	5.26

* Tasks rated above 4.98 are high in training emphasis
** Task difficulty rating of 5.00 is average

Plan of Instruction (POI)

In general, a review of the POI match and survey data indicates current training is well justified. Based on previously mentioned assistance from subject-matter specialists in matching inventory tasks to the POI, computer products were generated displaying the results of the matching process. Information on these products includes training emphasis (TE) and task difficulty (TD) ratings, as well as percent members performing the tasks for first-job (1-24 months TAFMS) and first-enlistment (1-48 months TAFMS) personnel.

While the data reflect good coverage in the course, there were seven tasks not covered which were rated high in TE (see Table 21). Of these seven, two (G210 and F130) had over 50 percent of first-job or first-enlistment personnel performing them, indicating that they should be considered for possible inclusion in the C3ABR42735 course. The remaining five had high TE ratings and at least 20 percent performing. Subject-matter specialists and training personnel should also review these to determine if they should be included as well.

In addition, there were 12 other tasks not currently covered by the course with over 50 percent first-job and first-enlistment personnel performing. Since TD ratings were below average and TE ratings were above average but not high, they should be looked at, but might be better handled through OJT, as they are currently.

One final consideration of the tasks not referenced to POI items involves those tasks related to composite repair. None of these tasks were matched to the POI, and several were rated high in task difficulty. As discussed previously, subject-matter specialists and training personnel should review these tasks for possible inclusion in the C3ABR42735 course, if other training is not provided prior to first enlistment.

TABLE 21

TASKS HIGH IN TRAINING EMPHASIS NOT REFERENCED TO C3ABR42735 POI

TASKS		TRAINING EMPHASIS*	FIRST-JOB (N=651)	FIRST-ENLISTMENT (N=1,327)	TASK DIFFICULTY**
G210	REMOVE DAMAGED AREAS WITH SKIN KNIVES	5.59	63	68	4.38
H233	INJECT RESIN INTO SKIN DELAMINATED AREAS	5.38	39	45	4.23
G176	CURE BONDED HONEYCOMB REPAIRS WITH HEATING BLANKETS	5.31	23	26	5.47
G207	REMOVE DAMAGED AREAS WITH PNEUMATIC KETTS SAWS	5.26	38	46	4.20
F130	INSTALL OR REMOVE GANG CHANNEL NUT PLATES	5.19	61	66	3.77
H229	CURE FIBERGLASS REPAIRS WITH HEATING BLANKETS	5.07	21	24	5.42
H240	PERFORM SOLID LAMINATE REPAIRS	4.98	30	34	4.99

* Tasks rated above 4.98 are high in training emphasis
** Task difficulty rating of 5.00 is average

ANALYSIS OF CONUS VERSUS OVERSEAS GROUPS

A comparison of survey data of the 1,049 42755 personnel within the continental United States (CONUS) to survey data of the 239 42755 personnel overseas showed very little difference between these two groups. The two groups are nearly equal in terms of average number of tasks (near the total sample average of 105) and percentage of first-enlistment personnel (69 percent of the CONUS group and 61 percent of the overseas group). Job satisfaction indicators for both groups were very high. The major difference between the groups was not surprising: the primary users of personnel overseas are USAFE and PACAF, while the primary users of personnel in CONUS are TAC, MAC, and SAC. Comparisons of duties and tasks of the two groups showed very little variation. These data suggest a uniform utilization policy for Airframe Repairmen for CONUS and overseas assignments.

MAJCOM ANALYSIS

Another area of analysis involves differences across major commands (MAJCOM). Analysis involved examining duty and task performance for six MAJCOMs (those over 5 percent of the sample): TAC, MAC, SAC, USAFE, ATC, and AFLC. Table 22 shows duty differences across MAJCOMs.

Overall, most differences were minor between the MAJCOMs in terms of tasks performed, except for notable differences with AFLC personnel. Rather than differences in terms of which tasks AFLC personnel performed that other MAJCOMs did not, the differences were in terms of which tasks AFLC personnel did not perform. Most of these tasks involve metal and bonded honeycomb repairs, fiberglass structural and honeycomb repairs, and tubing assemblies. The following are examples of tasks performed by most personnel in the other commands, and by only a small percentage of AFLC personnel:

make entries on AFTO Forms 349 (Maintenance Data Collection Record)
lay out sheet metal materials for local manufacturing
prepare adhesives
apply fiberglass repair materials to damaged areas
finish fiberglass repairs to smooth surface
prepare resin mixtures
bend tubing using hand benders
cut tubing
double flair tubing

Because most AFLC personnel are assigned to depot bases, they are not in a squadron that maintains their own aircraft. Therefore, they do not use AFTO Form 349 (Maintenance Data Collection Record), since that form is maintained by the squadron to which the aircraft is assigned. Also, telephone conversations with AFLC technicians indicate that many other tasks not performed by AFLC personnel are performed by civilians for aircraft sent to their base, due to such factors as civilian specialization or to utilization of military personnel in a TDY status to other bases.

A comparison of survey information for first-term personnel shows similar findings. In addition, first-enlistment personnel in AFLC perform a smaller number of tasks on the average (65 compared to the average of 100 for all first-enlistment personnel), and have a much lower JDI (7.7 compared to 11.9 for all first-enlistment personnel). This is most likely because of the more limited job these personnel perform. (See discussion of STRUCTURAL REPAIR PERSONNEL, depot and flightline worker variation, in the SPECIALTY JOBS section of this report).

TABLE 22

PERCENT MEMBERS PERFORMING DUTIES BY MAJCOM GROUPS

DUTIES	TAC (N=690)	MAC (N=507)	SAC (N=481)	USAFE (N=200)	ATC (N=147)	AFLC (N=169)
A PLANNING AND ORGANIZING	61	58	61	61	59	51
B DIRECTING AND IMPLEMENTING	66	65	68	69	68	72
C INSPECTING AND EVALUATING	54	56	57	60	53	58
D TRAINING	47	45	57	53	49	40
E PREPARING AND MAINTAINING FORMS, RECORDS, AND REPORTS	84	84	91	89	84	38
F FASTENER INSTALLATION AND REMOVAL DUTIES	96	92	95	97	90	93
G AIRCRAFT METAL AND BONDED HONEYCOMB REPAIRS	94	91	96	96	92	91
H FIBERGLASS STRUCTURAL AND HONEYCOMB CORE REPAIRS	81	76	91	83	76	37
I ADVANCED COMPOSITE STRUCTURE AND HONEYCOMB CORE REPAIRS	48	36	35	46	32	21
J TRANSPARENT PLASTIC REPAIRS	69	60	65	56	57	29
K AIRCRAFT CABLE MAINTENANCE	35	72	87	50	69	24
L MANUFACTURING TUBING ASSEMBLIES	77	74	90	81	70	30
M BALANCING AND ALIGNMENT OF AIRCRAFT STRUCTURES	16	28	25	12	48	18
N PERFORMING SEALING FUNCTIONS	80	80	80	80	61	67
O PERFORMING CROSS UTILIZATION TRAINING (CUT) FUNCTIONS	67	64	64	72	46	44

COMPARISON TO PREVIOUS SURVEYS

The results of this survey were compared to the results of the last survey, reported in OSR AFPT 90-534-148 (AFS 531X3, Airframe Repair Career Ladder), dated February 1976. Figure 3 compares the career ladder structure of the 1976 report to that of this analysis. Table 23 compares job satisfaction indicators by TAFMS groups.

Comparisons between the job structure findings of the 1976 survey and those of the 1983 survey indicate, in general, a stable structure for this career ladder. The current job structure analysis resulted in one large cluster and five independent job types. The 1976 analysis revealed 11 clusters and 11 job types; however, personnel in these clusters and job types performed the same basic job with minor differences in time spent on duties or tasks. Most of the 1976 clusters and job types are captured in the Structural Repair Personnel cluster of the 1983 analysis (see Figure 3). Two 1976 job types, Resident Course Laboratory Instructor and Resident Course Classroom Instructor, are merged in the 1983 independent job type of Resident Course Instructor. The 1976 Fabrication Superintendent cluster is captured in the 1983 Supervisory Personnel independent job type. The 1976 Equipment Maintenance and Supply Technician cluster is similar to the 1983 Tool Crib Monitor independent job type, although the 1983 group contains a much smaller number of personnel.

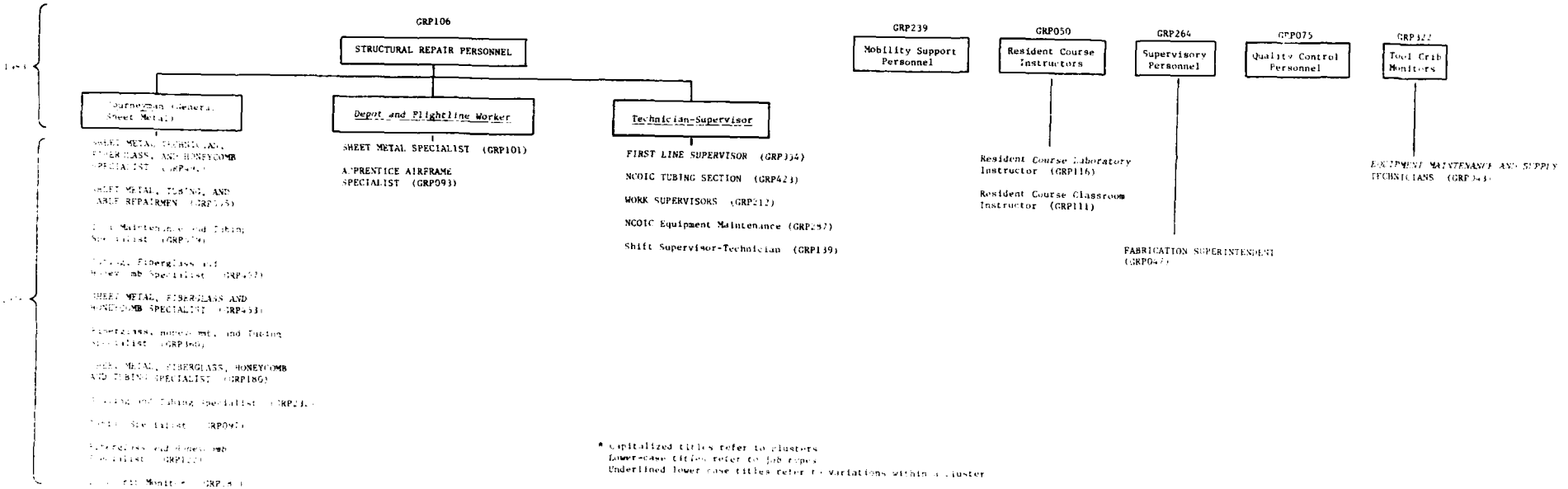
The 1983 analysis revealed two independent job types which were not directly comparable to the 1976 study results. These independent job types were Mobility Support Personnel and Quality Control Personnel. Tasks similar to those performed by these groups are performed to some extent across most jobs, but both these groups perform more specialized jobs, as explained in the CAREER LADDER STRUCTURE section of this report.

Skill-level and TAFMS groups were comparable, following the normal progression. Overall, the career field appears stable, with the exception of Mobility Support Personnel (see First-Enlistment section of the ANALYSIS OF TAFMS GROUPS discussion).

Job satisfaction indicators have remained high across time for all groups. For first-enlistment personnel, all indicators have increased slightly. For second- and subsequent-enlistment personnel, however, job satisfaction indicators have decreased slightly, though they are still very high. Positive reenlistment intentions have increased by over 10 percent for those personnel with 48 months or less and 97 months or more TAFMS. Personnel with 49-96 months TAFMS show a slight decrease in positive reenlistment intentions, though the percentage remains high.

FIGURE 3

CAREER LADDER COMPARISON*



* Capitalized titles refer to clusters
Lower-case titles refer to job types
Underlined lower case titles refer to variations within a cluster

TABLE 23

COMPARISON OF JOB SATISFACTION INDICATORS BY TAFMS GROUPS*
(PERCENT MEMBERS RESPONDING)

	FIRST ENLISTMENT**		49-96 MONTHS		97+ MONTHS	
	1976 (N=1,252)	1983 (N=1,327)	1976 (N=285)	1983 (N=448)	1976 (N=555)	1983 (N=567)
EXPRESSED JOB INTEREST:						
DULL	14	9	8	10	5	6
SO-SO	22	14	17	17	9	13
INTERESTING	63	77	74	72	84	80
PERCEIVED USE OF TALENTS:						
LITTLE OR NOT AT ALL	20	17	13	20	9	16
FAIRLY WELL TO PERFECTLY	79	83	87	79	91	84
PERCEIVED USE OF TRAINING:						
LITTLE OR NOT AT ALL	15	14	11	17	8	16
FAIRLY WELL TO PERFECTLY	84	85	89	82	92	84
REENLISTMENT INTENTIONS:						
WILL NOT/PROBABLY WILL NOT REENLIST	56	40	20	23	32	6
WILL/PROBABLY WILL REENLIST	43	59	79	76	68	80

* Columns may not add up to 100% due to rounding and no response

** First-enlistment includes personnel with 6-48 months TAFMS for the 1976 survey and 1-48 months TAFMS for the 1983 survey

SPECIAL CONSIDERATIONS

One of the primary reasons for conducting this survey was to determine the extent of advanced composite material repairs and to examine the implications of these data for curriculum training. Although current survey data indicates low percentages of personnel performing advanced composite structure and honeycomb repair tasks, previous survey data gave no indication of any personnel performing advanced composite repair tasks. Even the low percentages of the current survey, then, represent a substantial increase. Also, the increase in the use of composites in current and projected aircraft systems suggests that much greater percentages of personnel performing advanced composite repairs are likely in the near future. Another consideration that emphasizes the importance of this issue is the nature of the composite materials themselves: the chemical bonding of composite materials as well as their high susceptibility to edge damage, impact dents, and punctures requires that special care be taken in handling and repairing composite parts. This caution required in repairing advanced composites, together with the expected increase in personnel performing such repairs, stresses the importance of proper training for all personnel involved. In fact, a committee formed under the direction of HQ USAF/LEY to investigate projected expansion of advanced composite use came to the same conclusion: "Personnel training at all levels was judged to be imperative to prepare for the increase in composite usage" (see page 10, Final Report of the Advanced Composite Supportability Working Group).

To better analyze the extent of composite repairs, groups were formed of personnel working with F-15 and F-16 aircraft, which both use advanced composite materials extensively. Percentages of members performing tasks related to composite repairs were slightly higher for F-15 and F-16 personnel than for other groups; these personnel are largely responsible for the higher percentages in the tactical air forces. This information by itself implies that any training in advanced composite repair is most important for personnel who will be assigned to units working on these aircraft. With the addition of new aircraft systems using composites, such as the B-1 and T-46, personnel needing training in composite repair will be increased. In addition, the planned replacement of damaged structures with composite materials in existing aircraft will extend the need for advanced composite repair training to an even greater number of personnel.

An examination of the F-15 and F-16 groups by skill level shows that, in general, percentages vary only slightly by skill level, indicating that as many 3-skill level personnel are performing repairs involving composite materials as 5- and 7-skill level personnel. This information is presented in Tables 24 and 25. The similar percentages may be due to 3-skill level personnel performing these tasks while being trained; currently, advanced composite material repairs are part of OJT for 3-skill level personnel to upgrade to the 5-skill level in the TAF. Because training emphasis is above average and task difficulty is high for most of these tasks, the percentages of 3-skill level personnel performing composite repair tasks indicate that these tasks should be reviewed for possible course training if the use of composites continues to increase as projected.

In summary, the susceptibility of advanced composite materials to damage during repair and the increasing percentages of personnel performing composite repairs indicate training in this area is needed for Airframe Repair personnel. In addition, the planned extension of advanced composite materials to other aircraft systems indicates this training should be considered for personnel working on all aircraft systems. Finally, the percentages of 3-skill level performing tasks involving advanced composites, together with the above average Training Emphasis and Task Difficulty, indicate this training should be considered before first job assignment, as discussed earlier in the TRAINING ANALYSIS section of this report.

TABLE 24

ADVANCED COMPOSITE STRUCTURE AND HONEYCOMB REPAIR TASKS

TASKS		PERCENT MEMBERS PERFORMING						
		TOTAL SURVEY SAMPLE (N=2,356)	F-15 PERSONNEL*				TASK DIFF**	TNG EMP ***
			ALL (N=293)	3-SKILL LEVEL (N=61)	5-SKILL LEVEL (N=177)	7-SKILL LEVEL (N=55)		
I249	COORDINATE DAMAGE INSPECTION WITH NON-DESTRUCTIVE INSPECTION SECTION FOR ADVANCED COMPOSITE REPAIR	10	21	8	23	29	5.29	3.00
I250	CURE ADVANCED COMPOSITE REPAIRS USING HEAT-BLANKET-VACUUM METHOD	10	26	20	27	31	6.03	3.88
I251	CURE ADVANCED COMPOSITE REPAIRS USING HEAT-BLANKET-STACKED METHOD	5	13	8	11	24	6.31	3.66
I252	PATCH SURFACED DAMAGE AREA WITH GRAPHITE-EPOXY PRE-PREG FABRIC	5	12	11	11	13	6.54	3.74
I253	PATCH SURFACED DAMAGE AREA WITH TITANIUM FOIL PATCH PLATES	6	20	23	20	18	6.54	3.57
I254	PERFORM COMPOSITE PLY-TO-CORE DELAMINATION REPAIRS	8	16	15	15	20	6.54	3.69
I255	PERFORM COMPOSITE PLY-TO-PLY DISBOND REPAIRS	7	16	15	14	22	6.63	3.69
I256	PERFORM EVALUATION AND CLASSIFICATION OF DAMAGED COMPOSITE AREA	10	25	18	23	36	6.48	3.69
I257	PERFORM MINOR SURFACE DAMAGE OR DENT REPAIRS WITH STRUCTURAL ADHESIVE	34	47	41	52	40	4.95	3.57
I258	REMOVE DAMAGED COMPOSITE AREA WITH DIAMOND CUTTERS	6	15	7	18	16	6.17	2.98
I259	REMOVE DAMAGED COMPOSITE AREAS WITH HIGH SPEED ROUTERS	16	23	28	23	18	5.99	3.64
I260	REMOVE DAMAGED COMPOSITE MATERIALS WITH SPECIAL COMPOSITE MATERIALS REPAIR KIT	6	13	8	14	15	6.10	3.43
I261	REMOVE DAMAGED HONEYCOMB CORE WITH SPECIAL HONEYCOMB STRUCTURE REPAIR KIT	6	12	7	12	18	6.06	3.59
I262	REMOVE OR REPLACE COMPLETE COMPOSITE STRUCTURES	5	7	7	6	11	6.42	3.16
I263	RESEARCH -3 TECHNICAL ORDER FOR EXACT REPAIR PROCEDURES ON ADVANCED COMPOSITES	18	37	30	37	44	5.31	4.43
I264	WEAR PROTECTIVE CLOTHING DURING COMPOSITE DAMAGE REPAIR	17	31	31	33	25	3.82	4.24

* Represented by personnel assigned to F-15 bases
** Average task difficulty is 5.00
*** Average training emphasis is 3.17; high training emphasis is 4.98

TABLE 25

ADVANCED COMPOSITE STRUCTURE AND HONEYCOMB REPAIR TASKS

TASKS		PERCENT MEMBERS PERFORMING						
		TOTAL SURVEY SAMPLE (N=2,356)	F-16 PERSONNEL*				TASK DIFF**	TNG EMP ***
			ALL (N=255)	3-SKILL LEVEL (N=50)	5-SKILL LEVEL (N=138)	7-SKILL LEVEL (N=67)		
I249	COORDINATE DAMAGE INSPECTION WITH NON-DESTRUCTIVE INSPECTION SECTION FOR ADVANCED COMPOSITE REPAIR	10	23	20	23	25	5.29	3.00
I250	CURE ADVANCED COMPOSITE REPAIRS USING HEAT-BLANKET-VACUUM METHOD	10	24	28	22	25	6.03	3.88
I251	CURE ADVANCED COMPOSITE REPAIRS USING HEAT-BLANKET-STACKED METHOD	5	14	20	10	16	6.31	3.66
I252	PATCH SURFACED DAMAGE AREA WITH GRAPHITE-EPOXY PRE-PREG FABRIC	5	15	18	12	16	6.54	3.74
I253	PATCH SURFACED DAMAGE AREA WITH TITANIUM FOIL PATCH PLATES	6	12	10	12	13	6.54	3.57
I254	PERFORM COMPOSITE PLY-TO-CORE DELAMINATION REPAIRS	8	16	20	12	21	6.54	3.69
I255	PERFORM COMPOSITE PLY-TO-PLY DISBOND REPAIRS	7	16	12	13	24	6.63	3.69
I256	PERFORM EVALUATION AND CLASSIFICATION OF DAMAGED COMPOSITE AREA	10	25	22	21	34	6.48	3.69
I257	PERFORM MINOR SURFACE DAMAGE OR DENT REPAIRS WITH STRUCTURAL ADHESIVE	34	40	36	43	37	4.95	3.57
I258	REMOVE DAMAGED COMPOSITE AREA WITH DIAMOND CUTTERS	6	18	22	15	21	6.17	2.98
I259	REMOVE DAMAGED COMPOSITE AREAS WITH HIGH SPEED ROUTERS	16	26	36	22	27	5.99	3.64
I260	REMOVE DAMAGED COMPOSITE MATERIALS WITH SPECIAL COMPOSITE MATERIALS REPAIR KIT	6	16	20	13	21	6.10	3.43
I261	REMOVE DAMAGED HONEYCOMB CORE WITH SPECIAL HONEYCOMB STRUCTURE REPAIR KIT	6	13	18	9	16	6.06	3.59
I262	REMOVE OR REPLACE COMPLETE COMPOSITE STRUCTURES	5	9	12	9	7	6.42	3.16
I263	RESEARCH -3 TECHNICAL ORDER FOR EXACT REPAIR PROCEDURES ON ADVANCED COMPOSITES	18	36	38	34	40	5.31	4.43
I264	WEAR PROTECTIVE CLOTHING DURING COMPOSITE DAMAGE REPAIR	17	29	32	28	30	3.82	4.24

* Represented by personnel reporting they work on F-16 aircraft
** Average task difficulty is 5.00
*** Average training emphasis is 3.17; high training emphasis is 4.98

IMPLICATIONS

Occupational survey results indicate that jobs within this career ladder are very similar. Notable differences exist in specialized jobs, identified as independent job types, but the basic technical job is performed by most personnel across the career ladder structure. One area of concern among these jobs involves Mobility Support Personnel. As discussed previously, utilization of personnel in this job results in low job satisfaction indicators and is inconsistent with the current AFR 39-1. Functional managers and manpower specialists need to study this problem and possibly transfer responsibility for Bare Base building maintenance to another specialty.

A second issue in this study was the extent of advanced composite material repairs. Survey data show that percentages of personnel performing composite repair tasks average under 30 percent. When examined by MAJCOM groups, however, survey data show higher percentages for TAC, USAFE, PACAF, and AAC. Although this information suggests that training be given only to personnel assigned to these MAJCOMs, the fact that first-assignment personnel are performing these repairs as much as more senior personnel and the fact that some personnel in every MAJCOM are performing these tasks, indicates training should be given prior to the first assignment. This consideration is especially important in view of the planned increase in the use of composite materials throughout all MAJCOMs.

Another area of concern addressed in this report is the utilization of 3-skill level personnel in tasks that involve inspecting and classifying aircraft damage, parts, and repairs. If 3-skill level personnel continue to perform these tasks, corresponding STS proficiency codes should be raised so they will reflect the necessary training for these tasks. On the other hand, it may be more appropriate for 3-skill level personnel to stop performing these tasks.

APPENDIX A

TABLE I

STRUCTURAL REPAIR PERSONNEL
(GRP106)

TASKS		PERCENT MEMBERS PERFORMING (N=1,969)
F110	DRILL OUT AND REMOVE RIVETS	99
F140	INSTALL SOLID SHANK RIVETS	99
F107	COUNTER-SINK RIVET HOLES	99
F111	DRILL RIVET HOLES	98
F162	REMOVE SOLID SHANK RIVETS	97
G216	SECURE SHEET METAL WITH CLECO FASTENERS	97
F136	INSTALL PULL-THRU BLIND RIVETS	97
G218	STOP DRILL CRACKS ON SHEET METAL	96
F143	LAYOUT RIVET PATTERNS	96
F133	INSTALL OR REMOVE NUT PLATES OTHER THAN GANG CHANNEL	95
F112	INSPECT FASTENERS FOR FLUSH INSTALLATION	94
G205	REMOVE DAMAGED AREAS BY CHAIN DRILLING	94
F158	REMOVE PULL-THRU BLIND RIVETS	94
G187	FORM AND TRIM METAL PATCHES OR REINFORCEMENTS	94
G181	CUT RIVETS	94
G179	CUT AND TRIM SHEET METAL	93
G198	INSTALL NON-FLUSH SKIN PATCHES	91
G220	TRIM AND FIT PANELS	90
F131	INSTALL OR REMOVE HINGES	90
G206	REMOVE DAMAGED AREAS WITH AVIATION SNIPS	89
F139	INSTALL SELF-PLUGGING (MECHNICAL LOCK) BLIND RIVETS	88
F165	SMOOTH RIVETS WITH MICROSHAVER	86
G197	INSTALL FLUSH SKIN PATCHES	85
G219	TRIM AND FIT DOORS	84
G167	APPLY AERODYNAMIC SMOOTHING COMPOUNDS	84
G168	APPLY CORROSION PREVENTATIVES	83
F161	REMOVE SELF-PLUGGING (MECHNICAL LOCK) BLIND RIVETS	83
L319	CUT TUBING	83
G166	ALIGN RIVET OR SPECIAL FASTENER HOLES	82
L320	DEBUR TUBING	82
F134	INSTALL OR REMOVE QUICK RELEASE TYPE LATCHES	81
F154	REMOVE JO-BOLT FASTENERS	81
L322	FILE OR SAND TUBING	80
H225	CLEAN DAMAGED AREA WITH METHYL ETHYL KETONE (MEK)	80
G172	CLEAN REPAIR SURFACE BY SOLVENT METHOD	80
F123	INSTALL JO-BOLT FASTENERS	80
F138	INSTALL SELF-PLUGGING (FRICTION LOCK) BLIND RIVETS	79
G183	DEVELOP LAYOUTS OF REPAIRS OR PARTS	79
G192	INSPECT INSTALLED RIVETS FOR STRUCTURAL DEFORMITIES	78
L316	BEND TUBING USING HAND TUBE BENDERS	78
G200	LAY OUT SHEET METAL MATERIALS FOR LOCAL MANUFACTURING	78
L329	SINGLE FLAIR TUBING	78
F160	REMOVE SELF-PLUGGING (FRICTION LOCK) BLIND RIVETS	77
F132	INSTALL OR REMOVE MACHINE OR STRUCTURAL SCREWS	77
G212	REMOVE FROZEN OR STRIPPED SCREWS	76

TABLE II

MOBILITY SUPPORT PERSONNEL
(GRP239)

TASKS		PERCENT MEMBERS PERFORMING (N=19)
F139	INSTALL SELF-PLUGGING (MECHNICAL LOCK) BLIND RIVETS	100
F111	DRILL RIVET HOLES	100
G179	CUT AND TRIM SHEET METAL	100
F143	LAYOUT RIVET PATTERNS	100
F110	DRILL OUT AND REMOVE RIVETS	100
F140	INSTALL SOLD SHANK RIVETS	100
G194	INSPECT REPAIRED OR DAMAGED AREA USING HAMMER TAP OR COIN TAP METHOD	95
G198	INSTALL NON-FLUSH SKIN PATCHES	89
G216	SECURE SHEET METAL WITH CLECO FASTENERS	89
F138	INSTALL SELF-PLUGGING (FRICTION LOCK) BLIND RIVETS	89
G168	APPLY CORROSION PREVENTATIVES	89
G181	CUT RIVETS	89
F107	COUNTER-SINK RIVET HOLES	89
G204	PREPARE ADHESIVES	84
H225	CLEAN DAMAGED AREA WITH METHYL ETHYL KETONE (MEK)	79
G213	REMOVE MOISTURE FROM HONEYCOMB ASSEMBLIES	79
G187	FORM AND TRIM METAL PATCHES OR REINFORCEMENTS	79
F161	REMOVE SELF-PLUGGING (MECHANICAL LOCK) BLIND RIVETS	79
F112	INSPECT FASTENERS FOR FLUSH INSTALLATION	79
F162	REMOVE SOLID SHANK RIVETS	79
F131	INSTALL OR REMOVE HINGES	79
G167	APPLY AERODYNAMIC SMOOTHING COMPOUNDS	74
N350	APPLY WINDOW SEALS	74
G191	INSPECT AND CLASSIFY METAL BONDED HONEYCOMB CORE DAMAGE	68
G205	REMOVE DAMAGES AREAS BY CHAIN DRILLING	68
N353	PREPARE SURFACES FOR SEALANT APPLICATION	68
G218	STOP DRILL CRACKS ON SHEET METAL	68
F160	REMOVE SELF-PLUGGING (FRICTION LOCK) BLIND RIVETS	68
G207	REMOVE DAMAGED AREAS WITH PNEUMATIC KETTS SAWS	68
F158	REMOVE PULL-THRU BLIND RIVETS	68
F132	INSTALL OR REMOVE MACHINE OR STRUCTURAL SCREWS	68
G172	CLEAN REPAIR SURFACE BY SOLVENT METHOD	63
N352	PREPARE SEALANT COMPOUNDS	63
N344	APPLY FILLET SEALS	63
G166	ALIGN RIVET OR SPECIAL FASTENER HOLES	63
G210	REMOVE DAMAGED AREAS WITH SKIN KNIVES	63
G192	INSPECT INSTALLED RIVETS FOR STRUCTURAL DEFORMITIES	58
F136	INSTALL PULL-THRU BLIND RIVETS	47
G215	RESHAPE DAMAGED METAL AREAS	47
N349	APPLY RUBBER SEALS	47
H232	FINISH FIBERGLASS REPAIRS TO SMOOTH SURFACE	47
H223	APPLY PARTING AGENTS SUCH AS POLYVINYL ALCOHOL (PVA)	47
J281	DRILL HOLES IN PLASTICS	47
G183	DEVELOP LAYOUTS OF REPAIRS OR PARTS	42
H242	PREPARE RESIN MIXTURES	42

TABLE III

RESIDENT COURSE INSTRUCTORS
(GRP050)

TASKS		PERCENT MEMBERS PERFORMING (N=17)
D70	COUNSEL INDIVIDUALS ON TRAINING PROGRESS	94
D68	CONDUCT RESIDENT COURSE CLASSROOM TRAINING	88
B26	COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	88
A1	ASSIGN PERSONNEL TO DETAILS	88
D85	SCORE TEST	82
E92	MAKE ENTRIES ON AF FORMS 1297 (TEMPORARY ISSUE RECEIPT)	82
C58	INSPECT FABRICATED OR REPAIRED ITEMS	76
D64	ADMINISTER TESTS	76
D71	DEMONSTRATE HOW TO LOCATE TECHNICAL INFORMATION	76
D86	WRITE TEST QUESTIONS	76
D79	EVALUATE PROGRESS OF RESIDENT COURSE STUDENTS	65
F112	INSPECT FASTENERS FOR FLUSH INSTALLATION	65
G216	SECURE SHEET METAL WITH CLECO FASTENERS	65
A6	DEVELOP OR IMPROVE WORK METHODS OR PROCEDURES	65
F111	DRILL RIVET HOLES	65
F107	COUNTER-SINK RIVET HOLES	65
C47	EVALUATE COMPLIANCE WITH PERFORMANCE STANDARDS	59
G199	INTERPRET DRAWINGS AND BLUEPRINTS	59
G179	CUT AND TRIM SHEET METAL	59
F140	INSTALL SOLID-SHANK RIVETS	59
G197	INSTALL FLUSH SKIN PATCHES	59
G205	REMOVE DAMAGED AREAS BY CHAIN DRILLING	59
F110	DRILL OUT AND REMOVE RIVETS	59
G198	INSTALL NON-FLUSH SKIN PATCHES	59
B36	INVENTORY EQUIPMENT, TOOLS, OR SUPPLIES	53
F109	DIMPLE RIVET HOLES USING RADIUS METHOD	53
F108	DIMPLE RIVET HOLES USING COIL METHOD	53
G206	REMOVE DAMAGED AREAS WITH AVIATION SNIPS	53
G181	CUT RIVETS	53
G192	INSPECT INSTALLED RIVETS FOR STRUCTURAL DEFORMITIES	47
E97	MAKE ENTRIES ON AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD)	47
G183	DEVELOP LAYOUTS OF REPAIRS OR PARTS	47
F162	REMOVE SOLID SHANK RIVETS	47
G187	FORM AND TRIM METAL PATCHES OR REINFORCEMENTS	47
F143	LAYOUT RIVET PATTERNS	47
G168	APPLY CORROSION PREVENTATIVES	47
F165	SMOOTH RIVETS WITH MICROSHAVER	41
B35	INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	35
G177	CUT AND FLANGE LIGHTENING HOLES	35
E98	MAKE ENTRIES ON AFTO FORMS 350 (REPARABLE ITEM PROCESSING TAG)	29
B31	IMPLEMENT SAFETY PROGRAMS OR PROCEDURES	29
B40	SUPERVISE APPRENTICE AIRFRAME REPAIR SPECIALISTS (AFSC 42735)	29
G200	LAY OUT SHEET METAL MATERIALS FOR LOCAL MANUFACTURING	29
N352	PREPARE SEALANT COMPOUNDS	29
N353	PREPARE SURFACES FOR SEALANT APPLIATION	29

TABLE IV

SUPERVISORY PERSONNEL
(GRP264)

TASKS		PERCENT MEMBERS PERFORMING (N=74)
C61	WRITE AIRMAN PERFORMANCE REPORTS (APR)	100
B26	COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	97
A6	DEVELOP OR IMPROVE WORK METHODS OR PROCEDURES	97
A5	DETERMINE WORK PRIORITIES	96
A1	ASSIGN PERSONNEL TO DETAILS	96
A19	PLAN OR SCHEDULE WORK ASSIGNMENTS	95
B35	INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	93
A25	SCHEDULE LEAVES OR PASSES	93
C47	EVALUATE COMPLIANCE WITH PERFORMANCE STANDARDS	92
C58	INSPECT FABRICATED OR REPAIRED ITEMS	89
B39	SUPERVISE AIRFRAME REPAIR TECHNICIANS (AFSC 42775)	89
A4	DETERMINE REQUIREMENTS FOR SPACE, PERSONNEL, EQUIPMENT, OR SUPPLIES	89
B38	SUPERVISE AIRFRAME REPAIR SPECIALISTS (AFSC 42755)	88
D71	DEMONSTRATE HOW TO LOCATE TECHNICAL INFORMATION	88
C48	EVALUATE INDIVIDUALS FOR PROMOTION, DEMOTION, OR RECLASSIFICATION	88
A2	ASSIGN PERSONNEL TO DUTY POSITIONS	86
A3	ASSIGN SPONSORS FOR NEWLY ASSIGNED PERSONNEL	85
C43	ANALYZE WORKLOAD REQUIREMENTS	84
C51	EVALUATE MAINTENANCE OR USE OF WORKSPACE, EQUIPMENT, OR SUPPLIES	84
D70	COUNSEL INDIVIDUALS ON TRAINING PROGRESS	84
A22	PLAN SELF-INSPECTION PROGRAMS	84
B40	SUPERVISE APPRENTICE AIRFRAME REPAIR SPECIALISTS (AFSC 42735)	82
B42	WRITE CORRESPONDENCE	82
C57	INDORSE AIRMAN PERFORMANCE REPORTS (APR)	82
A12	ESTABLISH PERFORMANCE STANDARDS FOR SUBORDINATES	81
B36	INVENTORY EQUIPMENT, TOOLS, OR SUPPLIES	81
B31	IMPLEMENT SAFETY PROGRAMS OR PROCEDURES	81
C60	SELECT INDIVIDUALS FOR SPECIALIZED TRAINING	80
C56	EVALUATE WORK SCHEDULES	78
B29	DIRECT MAINTENANCE OR UTILIZATION OF EQUIPMENT	77
E103	MAKE ENTRIES ON DD FORMS 1577 (UNSERVICEABLE (CONDEMNED) TAG MATERIEL)	77
D78	EVALUATE OJT TRAINEES	76
E102	MAKE ENTRIES ON DD FORMS 1574 (SERVICEABLE TAG-MATERIEL)	76
D65	ASSIGN ON-THE-JOB TRAINING (OJT) TRAINERS	76
E104	MAKE ENTRIES ON DD FORMS 1577-2 (UNSERVICEABLE (REPARABLE) TAG MATERIEL)	76
C52	EVALUATE PROCEDURES FOR STORAGE, INVENTORY, OR INSPECTION OF PROPERTY ITEMS	74
D81	MAINTAIN TRAINING RECORDS, CHARTS, OR GRAPHS	70
C50	EVALUATE JOB DESCRIPTION	70
G190	INSPECT AND CLASSIFY DAMAGE TO AIRCRAFT METAL STRUCTURES OTHER THAN HONEYCOMB CORE	68
D72	DETERMINE OJT TRAINING REQUIREMENTS	68
E97	MAKE ENTRIES ON AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD)	66

TABLE V

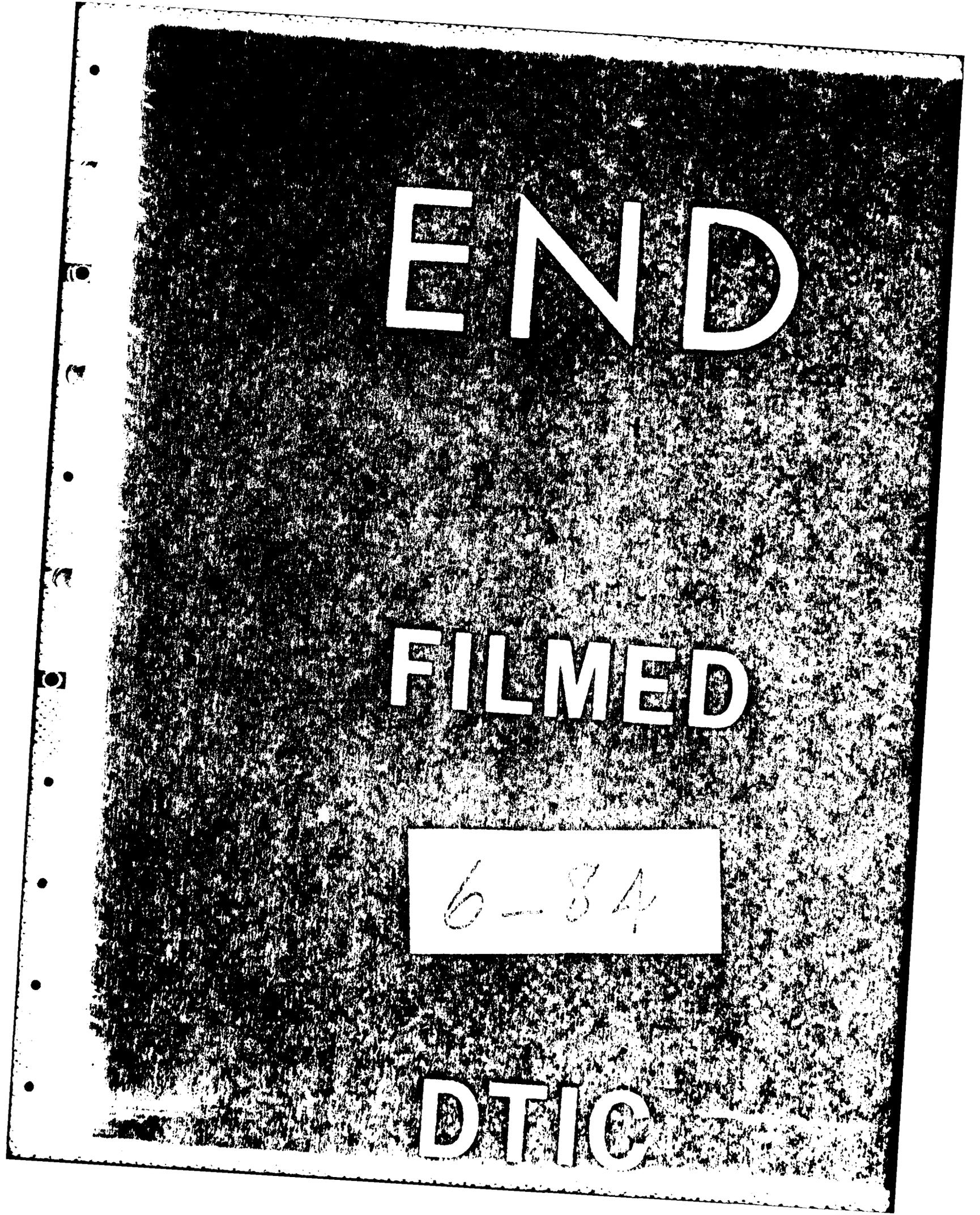
QUALITY CONTROL PERSONNEL
(GRP075)

TASKS		PERCENT MEMBERS PERFORMING (N=16)
H236	INSPECT FIBERGLASS REPAIRS FOR PROPER BOND	94
C58	INSPECT FABRICATED OR REPAIRED ITEMS	88
G189	INSPECT AIRCRAFT SURFACES FOR CORROSION	88
G194	INSPECT REPAIRED OR DAMAGED AREA USING HAMMER TAP OR COIN TAP METHOD	88
G188	INSPECT AIRCRAFT FOR STRUCTURAL FAILURES OR MALFUNCTIONS	81
G192	INSPECT INSTALLED RIVETS FOR STRUCTURAL DEFORMITIES	81
H234	INSPECT AND CLASSIFY FIBERGLASS HONEYCOMB CORE DAMAGE	81
H235	INSPECT AND CLASSIFY FIBERGLASS LAMINATED DAMAGE	75
C47	EVALUATE COMPLIANCE WITH PERFORMANCE STANDARDS	69
G190	INSPECT AND CLASSIFY DAMAGE TO AIRCRAFT METAL STRUCTURES OTHER THAN HONEYCOMB CORE	69
D71	DEMONSTRATE HOW TO LOCATE TECHNICAL INFORMATION	69
G191	INSPECT AND CLASSIFY METAL BONDED HONEYCOMB CORE DAMAGE	69
L323	INSPECT TUBING FOR DAMAGE	69
D78	EVALUATE OJT TRAINEES	63
E97	MAKE ENTRIES ON AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD)	63
C53	EVALUATE SAFETY PROGRAMS	56
G199	INTERPRET DRAWINGS AND BLUEPRINTS	56
E96	MAKE ENTRIES ON AFTO FORMS 22 (TECHNICAL ORDER SYSTEM PUBLICATION IMPROVEMENT REPORT AND REPLY)	56
N351	INSPECT FOR EFFECTIVE SEALS	56
F112	INSPECT FASTENERS FOR FLUSH INSTALLATION	50
G196	INSPECT SPOT WELDS	50
G214	RESEARCH -3 TECHNICAL ORDER FOR EXACT REPAIR PROCEDURES ON METAL BONDED HONEYCOMB STRUCTURES	50
K308	INSPECT CABLES FOR BROKEN WIRES, WORN SPOTS, KINKS, AND CORROSION	50
C59	INVESTIGATE ACCIDENTS OR INCIDENTS	44
C55	EVALUATE SUGGESTIONS	44
B35	INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	44
C52	EVALUATE PROCEDURES FOR STORAGE, INVENTORY, OR INSPECTION OF PROPERTY ITEMS	38
C51	EVALUATE MAINTENANCE OR USE OF WORKSPACE, EQUIPMENT, OR SUPPLIES	38
D80	EVALUATE TRAINING METHODS, TECHNIQUES, OR PROGRAMS	38
0356	INVENTORY COMPOSITE TOOL KITS (CTK)	38
E89	MAINTAIN TECHNICAL ORDER FILES	38
B38	SUPERVISE AIRFRAME REPAIR SPECIALISTS (AFSC 42755)	38
C49	EVALUATE INSPECTION REPORTS OR PROCEDURES	38
B26	COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	38
D67	CONDUCT OJT	31
A17	PLAN OR PREPARE BRIEFINGS	31
C61	WRITE AIRMAN PERFORMANCE REPORTS (APR)	31
B42	WRITE CORRESPONDENCE	31
A6	DEVELOP OR IMPROVE WORK METHODS OR PROCEDURES	31

TABLE VI

TOOL CRIB MONITORS
(GRP322)

TASKS		PERCENT MEMBERS PERFORMING (N=6)
B36	INVENTORY EQUIPMENT, TOOLS, OR SUPPLIES	100
E93	MAKE ENTRIES ON AF FORMS 2005 (ISSUE/TURN IN REQUEST)	100
E92	MAKE ENTRIES ON AF FORMS 1297 (TEMPORARY ISSUE RECEIPT)	100
E101	MAKE ENTRIES ON DD FORMS 1348-6 (NON-NSN REQUISITION (MANUAL))	83
E100	MAKE ENTRIES ON DD FORMS 1348-1 (DOD SINGLE LINE ITEM RELEASE/RECEIPT DOCUMENT)	83
E97	MAKE ENTRIES ON AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD)	67
E90	MAINTAIN UNIT SUPPLY RECORDS	50
E88	MAINTAIN PMEL RECORDS	50
0356	INVENTORY COMPOSITE TOOL KITS (CTK)	17
B42	WRITE CORRESPONDENCE	17
B28	DIRECT MAINTENANCE OF ADMINISTRATIVE FILES	17
B40	SUPERVISE APPRENTICE AIRFRAME REPAIR SPECIALISTS (AFSC 42735)	17
A22	PLAN SELF-INSPECTION PROGRAMS	17
C52	EVALUATE PROCEDURES FOR STORAGE, INVENTORY, OR INSPECTION OF PROPERTY ITEMS	17
E95	MAKE ENTRIES ON AF FORMS 601B (CUSTODIAN REQUEST/RECEIPT)	17
C47	EVALUATE COMPLIANCE WITH PERFORMANCE STANDARDS	17
D71	DEMONSTRATE HOW TO LOCATE TECHNICAL INFORMATION	17
A1	ASSIGN PERSONNEL TO DETAILS	17
A6	DEVELOP OR IMPROVE WORK METHODS OR PROCEDURES	17
A5	DETERMINE WORK PRIORITIES	17
B30	IMPLEMENT COST REDUCTION PROGRAMS	17
A18	PLAN OR PREPARE STATUS BOARDS, CHARTS, OR GRAPHS	17
E102	MAKE ENTRIES ON DD FORMS 1574 (SERVICEABLE TAG-MATERIEL)	17
E103	MAKE ENTRIES ON DD FORMS 1577 (UNSERVICEABLE (CONDEMNED) TAG MATERIEL)	17
B26	COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	17
0359	OPERATE AEROSPACE GROUND EQUIPMENT (AGE), SUCH AS POWER UNITS, HEATERS, LIGHT CARTS, OR LIFTS	17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